



# MAGAZINE

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# THE I.C.I. MAGAZINE

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The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, 26 Dover Street, London, W.1. The editor is glad to consider articles for publication, and payment will be made for those accepted.

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Front Cover: *The Shot Pourer*, by Charles Wormald.

## OUR CONTRIBUTORS

F. HARMAR-BROWN is a member of Central Publicity Department. He started out as an engineer and, having taken his degree at Cambridge and served a post-graduate apprenticeship with a large Midlands engineering concern, was asked to start up a works magazine for them. In this way he entered the field of technical publicity, where—apart from a couple of years as a plant maintenance engineer—he has remained ever since.

JAMES GOLDER retired from the post of Works Engineer, Ardeer Factory, at the end of the year. During the first world war he was an officer in the Royal Ordnance Corps and his service took him to Macedonia, where he was able to indulge his liking for wildfowling. He joined the Company at Billingham in 1927, and three years later he was transferred to the Explosives Group, now the Nobel Division. He has been Works Engineer since 1940. In 1941 he was bowling champion of Ardeer Recreation Club.

DR. N. G. MARR is Chief Medical Officer of Metals Division. He has held this post for the last twelve years; and it is no sinecure, as the Metals Division employs nearly 18,000 people. Son of an Aberdeenshire farmer, Dr. Marr graduated at Aberdeen University. After spending two years in a country practice in Wales, four years as surgeon with Canadian Pacific Steamships Ltd., and two years as resident medical officer at the London Clinic, he joined I.C.I. in 1938.

L. H. F. SANDERSON, now for many years on the First Class List of Rugby Union referees, spent most of his playing career with the London Scottish Football Club. He has refereed many big matches, including county championships, the 'varsity match at Twickenham, and Service matches, as well as club games over most of England. He is Overseas Personnel Officer to the Company and often visits our overseas organisations.

# From a G R E A T H E I G H T

By F. M. S. Harmar-Brown (Central Publicity Dept.)

Photographs by Charles Wormald (The Kynoch Press Studio)

Making shot by pouring molten lead from the top of a high tower through a sieve has been the accepted process for 150 years. The I.C.I. tower at Edmonton, near London, is the most modern of the British shot towers and has been working continuously since it was built in the year 1904.

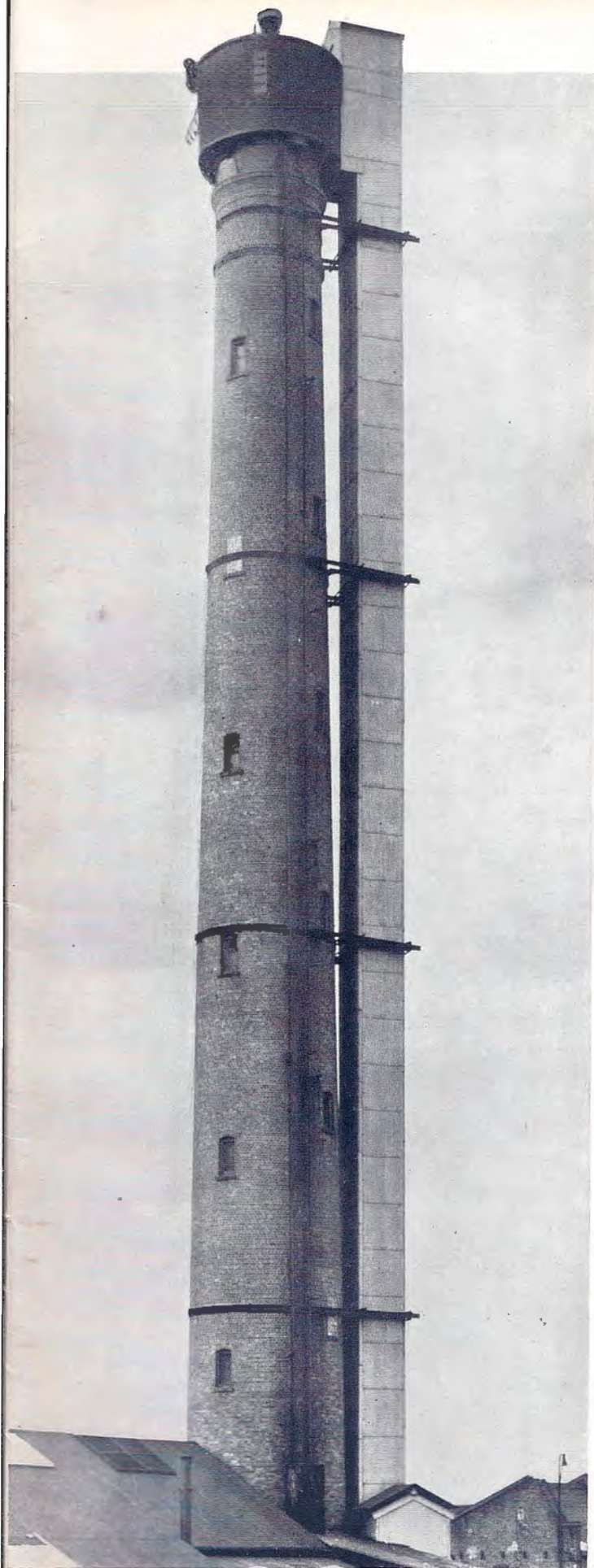
**S**HOT-POURING, surely the first of all mass-production processes, has the distinction of not having been invented by the Chinese. Its discovery is generally attributed to one Watts of Bristol, who, it is reported, "ascended the tower of St. Mary's Church on a hot day in 1787. Overcome by the heat, or some refreshment more potent, he fell asleep, and in a dream saw himself dropping molten lead to the ground and noticed that it took the form of pellets. Much impressed, he made experiments at home, sold his discovery, and the present shot towers resulted." Another report, which seems more likely, states that Watts was at the bottom of a steeple during a fire, and noticed that molten lead from the burning roof, falling into a pool of the water from the firemen's buckets, formed round pellets. In any event, there is no doubt that a Watts did sell the patents covering his shot-pouring technique to Walkers, Parker & Co. Ltd. for the then fabulous sum of £10,000.

Shot towers were built at Newcastle (1795), Chester (1800) and Bristol. The famous, now disused, shot tower on the south bank of the Thames, from which fortunate visitors to the Festival of Britain will be able to send signals in Morse to the moon, was completed in 1809.

I.C.I.'s own shot tower at Angel Road, Edmonton, devoted to the more practical business of making lead shot for I.C.I. 'Eley-Kynoch' sporting ammunition, was completed in 1904 and is one of the four working towers in this country. Incidentally, although very little shot is now sold "loose" (i.e. not loaded in cartridges), there is a considerable export trade to West Africa and other happy hunting grounds where muzzle-loading weapons are still a force to be reckoned with.

Modern shot-pouring, as carried out in the I.C.I. tower, is a nice blend of science and craftsmanship. The principle is exactly the same as it was in 1787, and there is still an art in pouring accurately graded shot, but science has taken a hand by developing improved lead alloys, laying down a proper



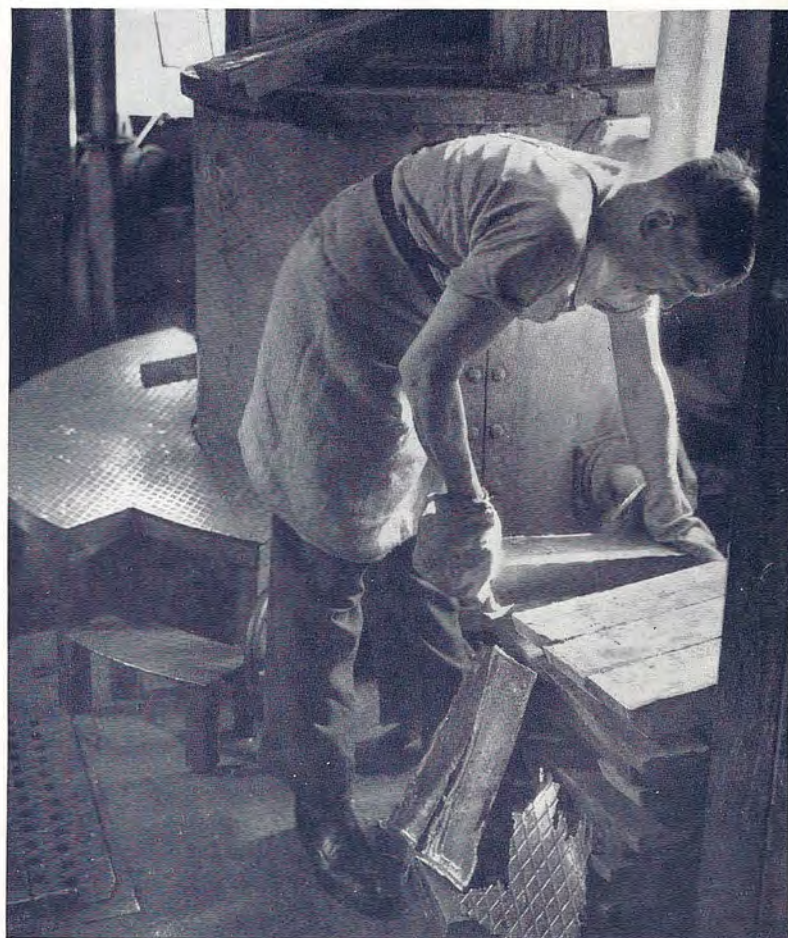


procedure for making the all-important "scum," and providing the most modern gas-fired furnaces for melting the lead.

The round brick tower is just over 170 ft. high—160 ft. from pouring tray to water tank—and a modern electric lift conveys lead ingots, shot-pourers and visitors up the outside of the tower to the pouring room at the top. Originally, the only way of getting up was by means of iron rungs projecting from the inside of the wall. As the wall tapers inwards, it seems to the climber that he is climbing out over open space, and anyone who has tried will know how unreassuring that feels.

The pouring room is where the business of shot manufacture really begins. It is circular, about fifteen feet in diameter, and it contains two two-ton gas-fired furnaces with their forced-draught fan, and a stack of lead "pigs" and "temper bars." These temper bars are ingots of lead alloy, cast in a separate building near the tower, which are added to the molten lead to produce an alloy suitable for pouring.

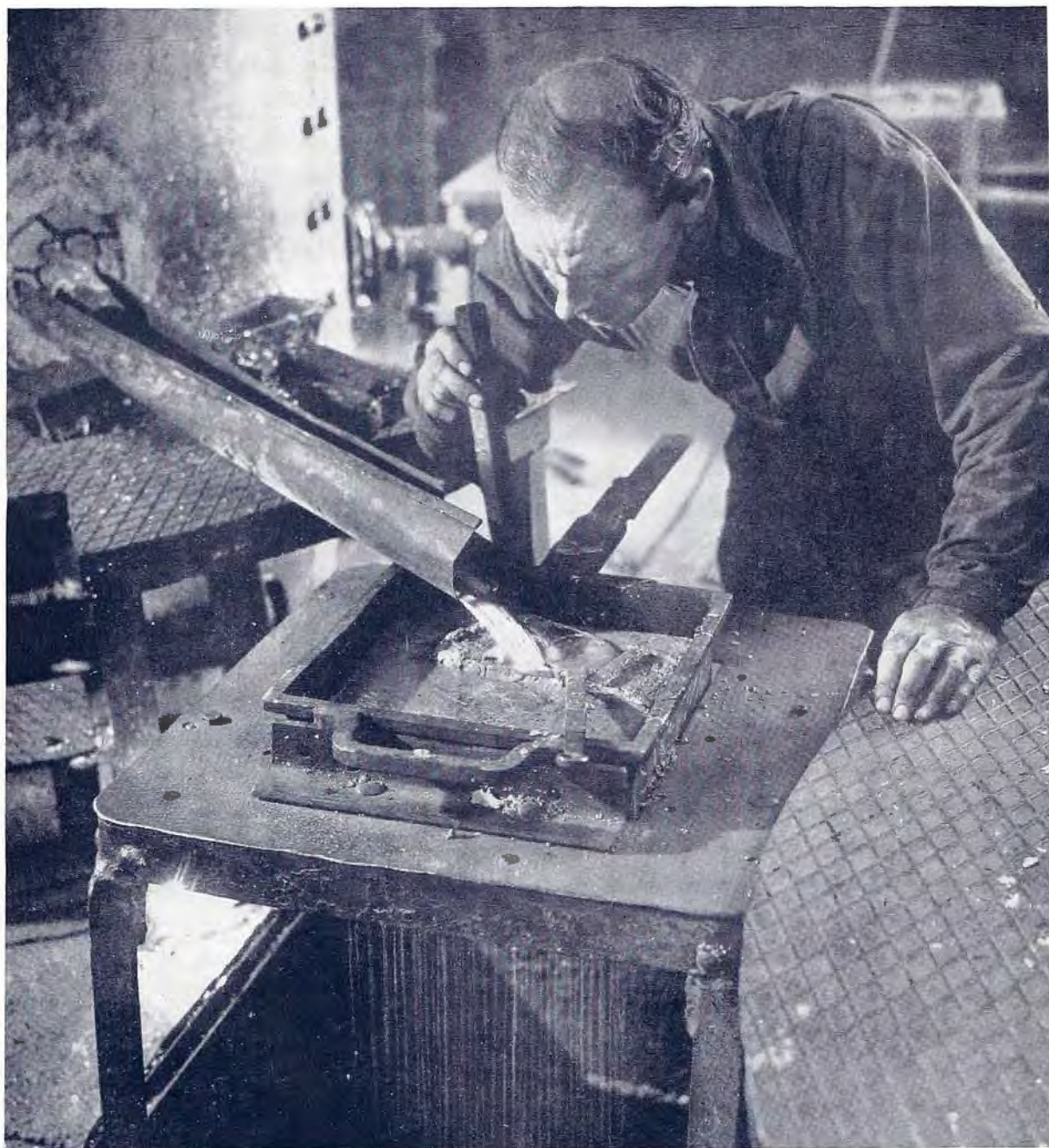
In the centre of the floor is a small square hole, over which stands a four-legged iron frame, and far below can be discerned a circular tank of water. Frank Hogben and Fred Beagles, the two shot casters, are adding lead pigs and temper bars to the melting pots; the draught fan roars, and the room is full of the scorching smell that always seems to accompany molten lead. When the furnaces are fully charged, a foot-square perforated iron tray is smoked, filled with "scum," gently swilled in molten lead, and set up on the frame over the hole. The



LEAD ALONE is too soft for shot. "Temper bars" are added when necessary to the mix in the furnace, which must be kept at a constant temperature.



*Fed alternately from two furnaces at the top of the tower, molten metal runs into the shot tray, forms globules beneath, and rains down inside the tower*



smoking—a happy combination of picturesqueness and efficiency—is achieved by passing the tray over a burning twist of tarred oakum. The size and number of the perforations depend on the size of shot being poured—a different tray being kept for each size—and there may be anything up to 1800 holes in the foot-square base of the tray.

The scum, originally the actual scum from the surface of the melting pots, is now specially prepared in the temper bar melting shop. Its main function is to distribute and clean the molten lead poured into the tray, but it does much more than this: it “makes for good pouring.”

When the melting pots are approaching pouring temperature—there is no tarred oakum about the modern dial-reading pyrometers which measure it—the fan is switched off and an almost eerie silence descends, broken only by an occasional gust of wind round the top of the tower. The valve from one

of the pots is opened and a glittering rivulet of molten lead, first a trickle, then a stream, falls into the tray. Then, as the drops from the tray hit the water in the cooling tank far below, a sound like the rattle of a hundred snare-drums fills the tower. Pouring has begun. In an hour and a half four tons of lead will have been turned into 65,000,000 pellets of No. 8 shot.

Why does the lead form *round* pellets, and why need the tower be so high? Exactly what happens when shot is poured is one of those things that starts a heated argument whenever it crops up, and the fervour of the theorists is equalled only by the mutual incompatibility of their conclusions. The facts are these.

When molten lead is poured into the perforated tray it does not *pour*, it *oozes* out of the holes in the base. As each droplet oozes out it is held from falling only over the area of the hole, since the sieve has been smoked to prevent “sticking.” The





*At the foot of the tower a hopper of water receives and cools the falling shot, which is removed by conveyor for drying, polishing and sorting. Here a sample is being taken for checking.*

drop grows to a critical size at which it is too heavy to be supported, and breaks away to fall down the tower. The drop may turn pear-shaped during the instant it is actually breaking away, but it quickly snaps back into shape owing to the high surface tension of the material. Drops fall from each hole at the rate of about six per second (for size 8 shot), and during pouring the underside of the tray, glistening with beads of lead, looks like nothing so much as a large black velvet pin-cushion.

The fall must be long enough for the drops to harden before they hit the water, otherwise the impact will deform them. Experience since 1787 has proved that 160-odd feet is the minimum safe height for satisfactory pouring of the heaviest sizes—which, of course, need the longest drop in which to cool.

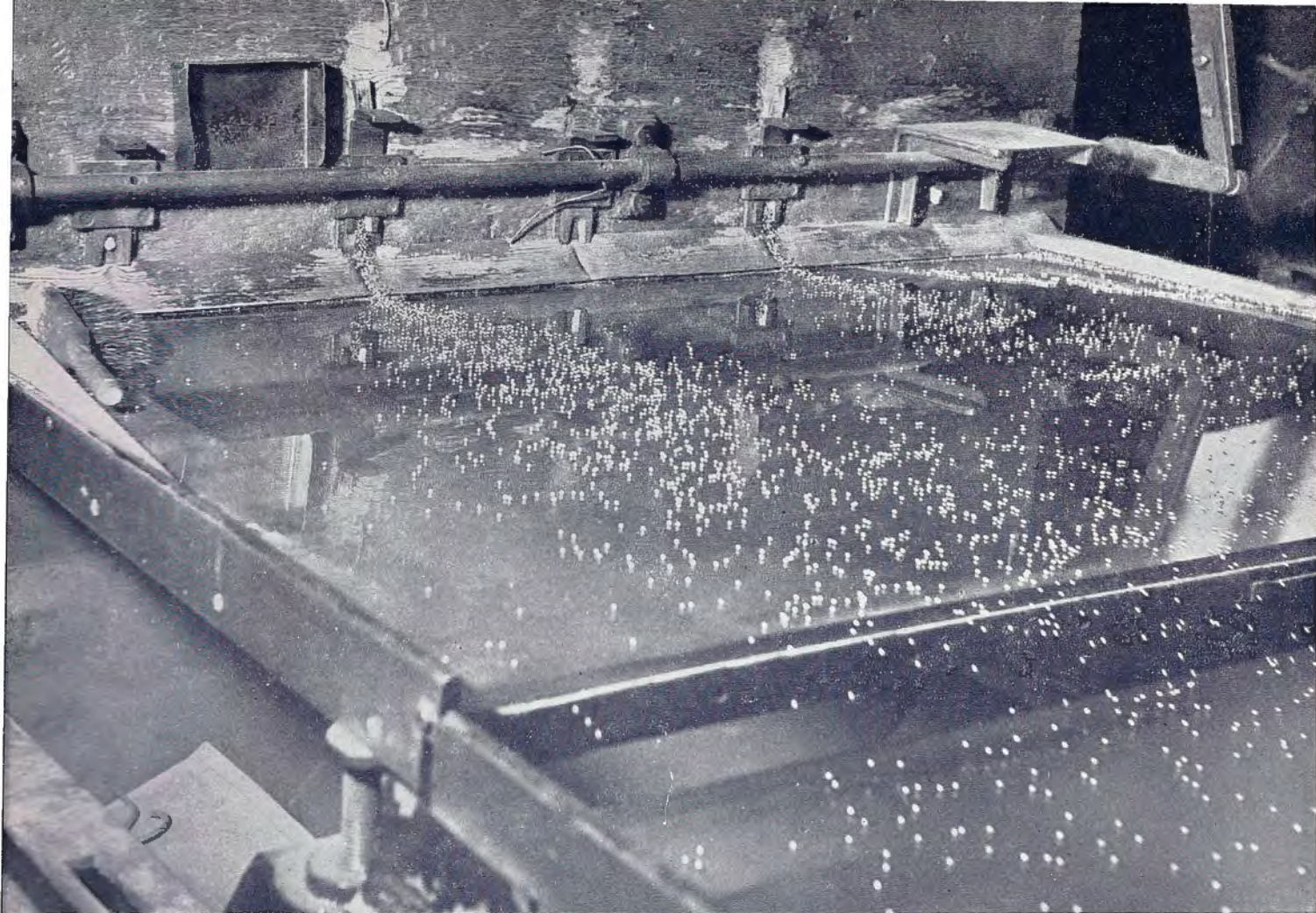
The above is a description of satisfactory pouring, but to maintain these ideal conditions for the full hour and a half

requires skill and care. During pouring, shot is tested every ten minutes for weight and shape. The number of pellets, light or heavy, per ounce is reported from below by telephone and repeated by the shot caster—"one light, shot all right"—in a manner slightly reminiscent of housey-housey.

Theoretically, the weight of the pellets depends entirely on the size of the holes in the tray, but when the inspector reports faulty shot, the shot casters must use their experience and judgment to decide whether to alter the pouring temperature of the "head" of lead in the pouring tray. Mr. John Morgan, in charge of the shot factory, has worked in the shot tower for thirty years, and it is not often or for long that faulty shot is poured in his presence.

From the bottom of the tower a square shaft of lead droplets, like a shaft of sunlight in the dust, can be seen rushing into the circular cooling tank. It does not do to look too closely,





AFTER BEING POLISHED, the shot is next tested for roundness by rolling over a stepped plate-glass table. The good ones jump the gap between each step, while the faulty and the "twins" (two stuck together) drop through and are collected for remelting.

because—by a calculation worthy of a contributor to *Endeavour*—I find that the shot is going at sixty miles an hour after its three-second fall, and even a size 8 pellet would catch one a nasty blow on the back of the neck at that speed.

The shot is dropped in batches into a second tank under the cooling tank so that the water can be run off, and then falls on to a conveyor which carries it to a rotary gas-fired drier. It is polished in batches in a rotating steel barrel, and graded for roundness by being allowed to roll over a kind of plate-glass ski jump. Out-of-round pellets do not roll fast enough to make the jump, and are returned to a bin for remelting. The round shot is finally graded on a rotary sieve and over- or undersize shot passed to appropriate bins. The finished shot, polished and sized, is packed in 28 lb. canvas bags to await delivery to the I.C.I. ammunition factory at Witton, Birmingham.

In the working day the Angel Road Shot Factory can produce no less than eight tons of finished shot, and it is a striking tribute to Mr. Watts of Bristol that the process he dreamed up in 1787 is still good enough to be used by Imperial Chemical Industries today.



THE SHOT IS WEIGHED and bagged by hand. The bags weighing 28 lb. are then stored in bays.





(LEFT TO RIGHT) *Sir Wallace Akers (Research Director), Mr. W. Willmoth (Chief Catering Adviser), Mr. J. Hay (Chief Labour Officer), Dr. C. J. T. Cronshaw (Joint Personnel Director and Chairman of the Council), Mr. A. W. Inglis (Secretary to the Council), and Mr. W. F. Lutyens (Group Director)*

## THE THIRTIETH CENTRAL WORKS COUNCIL

**B**LACKPOOL is famous for many things—its bracing air, its crowds, its fun fair, its illuminations. As it happened, none of these characteristics was in evidence when the I.C.I. Central Council met there on 17th November, which perhaps accounted for the impression that Blackpool opened up its shuttered houses and empty trams specially for the benefit of delegates and would sink back into its winter doldrums again on their departure.

The Winter Gardens, too, seemed glad to see Council back after its flighty experiment in the Casino, and the lighted windows of the cardboard castles gleamed a welcome to the 400 visitors who thronged the Spanish Hall at 10 a.m. on a chilly morning.

In control of the vast assembly was Dr. Cronshaw, who began by reading a letter from Lord McGowan. The Chairman, prevented by a long-standing engagement from enjoying a talk with his own people, sent a cheerful and inspiring message concluding with the words:

"I reiterate my confidence in the future of the Company, possessing as we do a magnificent body of people. God be with you!"

Dr. Cronshaw explained that the chair was to have been taken by Sir Frederick Bain, but most unfortunately he had been taken ill and was in hospital. Council immediately decided to send a telegram of good wishes to Sir Frederick but was not quick enough to anticipate the invalid, who himself wired:

"Profoundly sorry to miss Blackpool—my best wishes for a successful meeting."

Before opening the official proceedings, Dr. Cronshaw asked Council to stand for a moment as a tribute to two loyal colleagues who had died since the May meeting. These were Mr. John Paterson, formerly head of the Pensions and Assistance Funds Department and for many years a trustee of the Workers' Pension Fund, and Mr. Robert Maxwell, a workers' representative from St. Rollox Council who had given long and devoted service to the cause of joint consultation. He referred also to the retirement of Sir William Coates, whose brilliant explanations of economic affairs had been a feature of previous meetings.

The more pleasant duty of greeting newcomers fell to Mr. A. W. Inglis, Central Council secretary, who welcomed





*Central Works Council in session*

representatives from two new councils—those of Nylon Works at Billingham (Dyestuffs Division) and Plastics Works at Wilton. He also welcomed Mr. C. B. Cook of I.C.I. (China), who had managed to fit a visit to Blackpool into a very crowded timetable.

The official business of the day took two brisk steps forward with formal approval of previous minutes and an announcement that the I.C.I. Board had accepted the revised standing orders recommended by Council at its last meeting. Dr. Cronshaw then rose, modest and almost apologetic, to explain that, since the task of delivering the Chairman's address had descended rather suddenly on his shoulders, he had not had time to give to the task the deep and thoughtful consideration it really demanded. The words which followed, however, crystallised into an interesting and informative talk which lost nothing by its brevity.

Dr. Cronshaw drew Council's attention to charts showing I.C.I.'s contribution to the export trade to Canada and the United States over recent months. Encouraging as the picture was, he felt he should sound a note of warning: certain contingencies—a strike in America, resulting in an unexpected demand for British alkali products, for instance, and the opportunity for Dyestuffs Division to supply materials to I.C.I.'s new American constituent—had given exceptional impetus to our export trade, and it was not to be expected that we could continue at the same high rate of increase indefi-

nately. True, Metals Division was also increasing its sales in America, but here the question of raw material supplies had to be taken into account.

During 1950 three aspects of the Company's activities had earned considerable publicity. The first of these was the raising of new capital; in this connection he thought he could not do better than refer Council to Mr. Chambers' expert and lucid article in the *Magazine*. Second, the news given by Dr. Fleck in a lecture to the Society of Chemical Industry concerning deposits of potash on the East Coast. Until I.C.I. initiated its large-scale explorations some three years ago no worthwhile deposits of potash were known to exist in the British Isles. Now, thanks to the patient pioneer work of three I.C.I. units—Alkali and Billingham Divisions and Wilton Works—the nation could rest assured that very large supplies of this valuable mineral were buried in our own soil.

The third headline told the public of a new synthetic fabric—'Terylene'—which had been produced by the combined efforts of the Billingham, Dyestuffs and Plastics Divisions. Experiments in this field had been progressing for seven years, and had already cost the Company something like £1,500,000.

These two developments, in which slow and expensive research had been carried on "backstage" for a long period, were sufficient to prove, if proof were needed, that I.C.I. still had imagination, foresight, courage and, above all, faith in the people it employed.



The prolonged and hearty applause which greeted these remarks unwittingly adjusted the mood of the meeting to the next event—the presentation of the I.C.I. Bravery Award to Mr. H. Thornton, of General Chemicals Division. This medal, said Dr. Cronshaw, was given only as a reward for conspicuous personal bravery, and the rarity of its presentation made it a highly prized honour.

Mr. G. K. Hampshire, chairman of General Chemicals Division, read the citation, describing how Mr. Thornton, at great personal risk, had helped to prevent the spread of a serious fire. Chemical action had caused combustion in a lorry load of calcium, packed in aluminium drums, and before preventive action could be taken several drums caught fire, burning fiercely and with intense heat. With the fire at its height Mr. Thornton drove the lorry 100 yards to an open space near the fire station, where he jumped clear and helped to unload undamaged drums. By his actions he not only helped to save part of the load but prevented the fire from reaching adjacent buildings and endangering property and even life.

With the acclamations of the meeting ringing in his ears and the photographer's bulbs flashing in his face, Mr. Thornton then received the coveted medal from Dr. Cronshaw and rejoined his colleagues in a very proud Division.

Thanks and praise being the order of the hour, it was appropriate that the agenda next laid emphasis on help in need extended from one branch of the I.C.I. family to another. Mr. Inglis read a letter from Lord McGowan to Mr. Meehan of I.C.I.A.N.Z., in which the Chairman expressed the profound gratitude of I.C.I. employees for food parcels sent by their distant colleagues, representing "a magnificent and sustained gesture of friendship and good will which we in I.C.I. have valued beyond words." But while we should never forget what had been done, more plentiful and varied foodstuffs were now available at home, and it did seem that the time had come for the gift parcels to cease.

In reply Dr. Meehan had reiterated the great pleasure it had given the donors to send the parcels, and expressed confidence that the "great good will between I.C.I. and I.C.I.A.N.Z." would continue despite the severing of this particular link.

The text of the Chairman's letter is as follows:

My dear Meehan,

Nothing has touched us more in recent years than the wonderful gesture of the workers and staff of I.C.I.A.N.Z. in sending food parcels for their opposite numbers here in I.C.I. to eke out our somewhat restricted rations with just those commodities which have been hardest to obtain at home. And this most generous impulse has been magnificently sustained ever since 1945, resulting in well over 18,000 parcels coming from Australia and New Zealand to be distributed to fortunate recipients in all our Divisions as well as in Head Office. The money to finance this remarkable effort has been raised, as we well know, by personal subscriptions in every case (by contributions out of wages and salaries), from proceeds gathered from special entertainments as well as from the takings in canteens.

It represents a marvellous and spontaneous gesture of friendship and good will which we in I.C.I. have valued beyond words, and it came moreover at a time when the help which it gave was not only most needed but when the thought and sympathy which it represented were of their maximum inspiration; we shall never forget it.

But now, after five years, we are beginning to feel that the improvement, to some extent, in our circumstances over here is making it harder for us to justify the sacrifices which those in I.C.I.A.N.Z. are making on our behalf. It may even be, for example, in some cases that the cost to your people of the foodstuffs, inclusive of packing and carriage, sent over here may be higher than the prices in the shops paid



MR. W. E. BROWN (*Blackley Works, Dyestuffs Division*), chairman of the workers' representatives



MR. J. HASTINGS, workers' representative from Metals Division





THE I.C.I. BRAVERY AWARD is presented to Mr. Henry Thornton (Gaskell-Marsh Works, General Chemicals Division)

by us, while in general—and this is what weighs with us most—many of the goods which you have been so generously sending to us, and which at one time were quite unobtainable over here, appear to have found their way back into our shops.

It would indeed grieve us to think that we should continue to countenance self-sacrifice of the staff and workers of I.C.I.A.N.Z. for a day longer than the reality of the circumstances could justify, and indeed it would sadly tarnish the glow of our appreciation were we to permit such a thing.

I know, therefore, that I speak for all in this great Company when I suggest that the time has now come for those in I.C.I.A.N.Z. to discontinue their most inspiring and gracious gesture towards us.

I have no need to assure them of our lasting appreciation of their generosity.

To this Dr. Meehan replied:

My dear Lord McGowan,

It was with particular pleasure that I received your nice letter of September 7th, and I am sure that it will charm our staff and workmen when they see copies of it. All of us have been glad to do what little we could to help our friends and relatives in Britain to get a little variety into their food in the recent lean years, and indeed to pay tribute to their standing up to all the hardships and sorrows during and after the war. Most people here have received wonderful, sometimes very touching, letters from their old and new friends about parcels received; such things make the heart rejoice about even small things well done.

The parcels have undoubtedly fostered great good will between I.C.I. and I.C.I.A.N.Z., and it is a happy thought that the mutual esteem will last long after the parcels episode fades from memory.

I hope you are now in good health again and full of fighting spirit.

Dr. Cronshaw next introduced the newly elected chairman of workers' representatives—Mr. W. E. Brown of Dyestuffs

Division—who carried out his duties in a manner that commanded the sympathy of the meeting.

Mr. J. Hastings (Metals Division) took his first trip to the microphone to ask for uniformity throughout the Company in the matter of awards for suggestions. Support from Mr. A. R. Allardyce (Billingham Division) and opposition from Mr. Polack (General Chemicals) gave promise of an interesting debate, but the serene voice of the secretary ruled the motion out of order on a technical point.

After this diversion Mr. H. R. Payne brought a sober note into the discussion of the Safety Report. There were some signs that, for the first time since the war, our safety record had deteriorated slightly; it was particularly disturbing to find that in the ten months of this year fourteen people had been killed in I.C.I. factories. Though fortunately the picture had its brighter aspects—the dramatic reduction in the accident rate in the Billingham anhydrite mine, for instance—the facts pointed to the need for continued vigilance on the part of all who had any responsibility for safety at work. "It is teamwork that is all-important," Mr. Payne said. "If everybody will play some part in this, we can at least get down to the accident rate of 1.00 at which we are at present aiming."

Steering the thoughts of the audience from security at work to security in retirement, Mr. J. A. L. Young said how much the Workers Pension Fund would miss the wise counsels of Mr. Paterson. From the way in which he marshalled the figures in the annual report it seemed as if Mr. Young had inherited at least one of Mr. Paterson's gifts—that of clear and lively presentation of facts and figures.

Three resolutions concerning Pension Fund benefits occupied Council only briefly. A motion for the replacement of present



death benefits by pensions for widows and orphans was referred back after little discussion to the Division councils for further consideration. And a proposal for an immediate increase in male pensions, although received with sympathy, was found to present serious practical difficulties and met with little support.

The final stage of the "Reports and Statistics" section of the agenda came in Mr. Lightfoot's encouraging account of the Workers Friendly Society. And so, with perhaps a sigh of relief for duty nobly done, Council relaxed in anticipation of the long-adjourned break for coffee.

They had, however, reckoned without the vagaries which invariably accompany a conference agenda, for what might have been a brief announcement that two new I.C.I. films would be shown before lunch developed into quite a prolonged, though amicable, discussion on joint consultation between Mr. Brown and the chairman, with a helpful comment or two from Mr. Hastings. Mr. Brown thought that the films should not have been placed on the Council's agenda without previous joint consultation. They might, he said, be a waste of time. To this the chairman made the rejoinder that Council could hardly have a view on whether or not the films were wasting time until they had seen the films, which was precisely what it was proposed to do.

After this lively interlude most people managed to snatch a hasty refresher before descending into an underground cinema for ninety minutes' genuine entertainment by *Feature Story*

and *Enterprise*. A short article on the two films will be included in next month's INFORMATION NOTES.

Even the ponderous gloom of the Baronial Hall failed to quell the spirits of the party during lunch, and no stern pressure was needed to bring about a punctual resumption of business. A neat bit of timing on the part of the secretary allowed most of the afternoon session to be devoted to a topic of universal interest—food. Two resolutions testified to the reaction of employees to recent increases in the price of I.C.I. meals, and the vigour with which the discussion raged perhaps did more than anything else to underline the personalities of this Council's principal speakers. Most speakers were prepared to admit that the increases were inevitable—nay, the Company had been generous in postponing them so long. But could not the workers have been consulted before they were made? Might not their view have been heard on how best to distribute the increases over the different items?

Now Metals Division's fiery champion of lost causes, Jim Hastings, shook a verbal fist; now Billingham's Mr. Allardyce and Nobel's Mr. McCall, less robust but no less certain of their ground, tried gentler tactics; now Dr. Cronshaw's impartial reiteration of proven facts steadied the fret of controversy (running the canteens in 1949 cost the Company the huge total of £319,000); now Mr. Gilmour of Metals Division, a logical and skilled debater, put in a firm word before both resolutions, defeated on a vote, were passed back to Divisions for further consideration.



*A motion is put to the vote*





MR. ALLARDYCE (*Ammonia Works, Billingham*)



MR. QUINN (*Fleetwood Works, Alkali Division*)



A GROUP OF WORKERS' representatives chat together during the morning break for coffee, including Mr. Castle (*Huddersfield*), Mr. Humphries (*Blackley*), Mr. Jackson (*Winsford*), and Mrs. Cross (*Witton*).

The last item on the agenda—financial assistance for employees still unfit for work after 26 weeks' absence—found Metals Division delegates pleading a cause supported by workers' and management representatives alike, and the day's long deliberations ended with a unanimous request to the Company that ways and means of meeting this request should be sought.

The note of agreement was echoed when Mr. Brown thanked the chairman for conducting the meeting, and there was nothing either formal or perfunctory in the approval

which was instantly forthcoming from the floor of the house.

Mr. Brown commented that the Company was fortunate in being able to produce such an expert and popular chairman at a moment's notice. Perhaps in this observation he hit upon one of the reasons why I.C.I., in spite of its size, retains its humanity. For through the machinery of joint consultation, operating not only at official meetings but all day and every day, a sure if intangible thread of contact is maintained between employees at all levels—a pulse which beats steadily in a healthy body.



# African Explosives and Chemical Industries Ltd.

The big date in South Africa's history is 1886—the year gold was discovered in the Transvaal. Nine years later gold-mining was of a scale to warrant local manufacture of explosives. From these beginnings has grown the chemical industry of South Africa, which today boasts the largest explosives factory anywhere in the world, at Modderfontein.



THE EXPLOSIVES FACTORY at Modderfontein covers over fifteen square miles. (LEFT) Off-loading materials into the "dope store."

IT may come as a surprise to readers of the *Magazine* to learn that the biggest explosives factory in the world is situated not in this country, nor in the U.S.A., but in South Africa. At Modderfontein, near Johannesburg, African Explosives and Chemical Industries Ltd. produce explosives on a scale that outstrips all others; and even their smaller explosives plant at Somerset West in the Cape Province ranks third largest in the world in terms of output.

Like so many other enterprises, A.E. & C.I. was born of necessity. Gold was discovered in the Transvaal Republic in 1886; and soon hordes of diggers and adventurers were making their way to the Witwatersrand—"white waters reef." On this spot Johannesburg, the second greatest city in the African Continent, grew up on ground considered so bleak and of so little value that it had changed hands for a team of oxen. Now it is the centre of the densest industrial area in the whole of Africa.





The story of A.E. & C.I. begins in 1895 with the formation of De Zuid Afrikaansche Fabrieken voor Ontploffbare Stoffen Beperkt. At that time all explosives for the African mines were being imported from Great Britain and Germany. By making explosives in the Transvaal instead of importing them it was hoped to produce at lower cost and thereby assist the infant mining industry, which was badly hit by rising costs. The Dynamit Actien-Gesellschaft, a company linked with the Nobel Dynamite Trust, provided the necessary financial assistance and the Zuid-Afrikaansche factory was the outcome.

The factory at Modderfontein was opened by President Kruger towards the end of 1895, but the disruption caused by the Jameson Raid prevented it starting operations until October 1896.

They had plenty of troubles to contend with. Many of their workers had been imported from Germany and Italy, and due to what is nowadays politely described as incompatibility of temperament they had to be housed in their own separate villages. These were known as "Italy," "Holland" and "Hamburg." Later the last named was changed to "Antwerp." The South Africans kept themselves in yet another village. Perhaps it was fitting that the explosives industry in South Africa, which was to make possible the winning of gold on a scale never before seen by man, began quite simply as a co-operative effort by a small body of men from many nations working and struggling during the day and going home their separate ways at night. A perfect example of the value of agreeing to differ!



IN 1895 A SPECIAL VISIT was paid to Modderfontein by

They had enough to struggle with. Their production of 80,000 cases annually was insufficient to meet the demand and almost as much again had to be imported; the problem of high costs still caused complaints from the mines. Nevertheless, by the outbreak of the South African War, production had gone up to 250,000 cases. Then hostilities almost brought the factory to a standstill.

In 1902 De Zuid Afrikaansche Fabrieken Voor Ontploffbare Stoffen Beperkt went into liquidation and a new company, British South African Explosives Co. Ltd., was formed.

Nobel's Explosives Co. had a large interest in this concern and sent out a number of experienced operators from Scotland. Production went up once more to 250,000 cases annually.

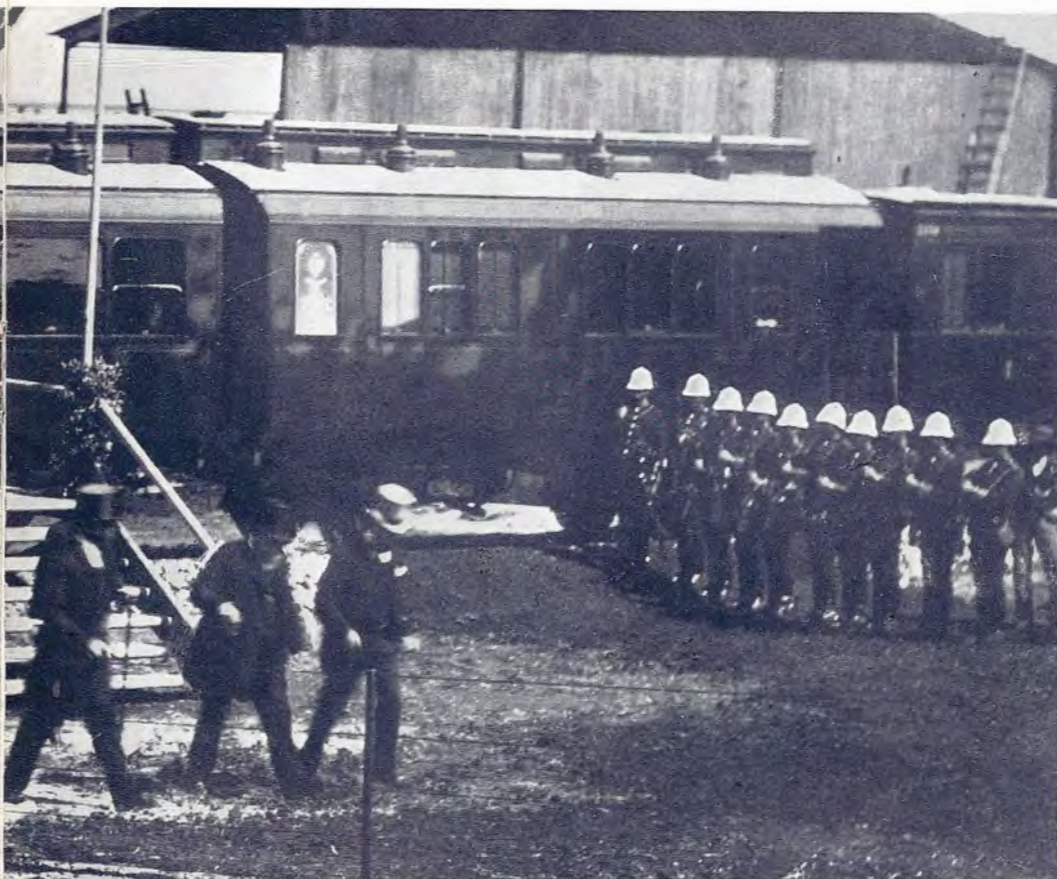
Two years earlier Cecil Rhodes, with the aim of bringing down the cost of explosives for the diamond mines of Kimberley and elsewhere, had convinced the De Beers interests that it would be worth while setting up an explosives factory in Cape Province. This led to the formation of Cape Explosives Works Ltd., and production started in July 1903.

In 1908 the British South African Explosives Co. had still further competition to face when Kynochs erected a factory at Umbogintwini, near Durban, in an area hacked out of virgin bush.



SOUTH AFRICAN ARCHITECTURE has a distinctive charm, as can be seen from this view of the main gate of the Somerset West factory





*President Kruger for the purpose of opening the factory*

After World War I the formation of Explosives Trades Ltd. brought Modderfontein and Umbogintwini under the same management. This led to all explosives manufacture being concentrated at Modderfontein, and the Umbogintwini factory was converted to the production of fertilizers and insecticides.

In 1923 Sir Harry McGowan, as he was then, went out to South Africa and met the chairman and board of De Beers. As a result of their negotiations it was decided to merge their interests into one company, to be known as African Explosives and Industries Ltd., which started up in 1924. Later its designation was altered to African Explosives and Chemical Industries Ltd. as being more descriptive of its wide range of interests.

Since then two more factories have been opened: the Rodia factory near Salisbury, Southern Rhodesia, and the other at Klipspruit near Johannesburg.

Modderfontein, with an area of fifteen square miles, is the biggest of its type in the world. Situated as it is on the Rand, it is well placed to cater for the explosives requirements of the district. With devaluation and the consequent impetus given to the winning of gold, the demand for explosives—now about 75,000 tons or 3,000,000 cases a year—will increase. To meet



SPORTING EVENTS similar to our own are encouraged. (ABOVE) The factory manager starts a tug-of-war

opened by the South African Secretary of Commerce and Industries.

Umbogintwini Factory, which lies outside Durban, has also recently completed large extensions to its superphosphate plant. Together with Somerset West, the combined potential of these two factories is now some 650,000 tons, making A.E. & C.I. the largest producer of fertilizers in the Southern Hemisphere. Umbogintwini is an example of the difficulties against which A.E. & C.I. have had to contend. During the ten-year period from 1924 to 1933 the company made a loss of £118,000 on the manufacture of superphosphate at Umbogintwini. Despite the lack of any tariff protection against severe overseas competition, the board decided that it was in the best interests of the community that the factory should

not be shut down. They resolved to fight through the bad years until some return could be obtained for the capital expended. Plans were made to increase production, and the triumph of this foresight culminated in the opening of the new extensions last December by the Hon. D. G. Shepstone, the Administrator for Natal.



A.E. & C.I. Film Unit

Superphosphate manufacture consists essentially in reacting ground phosphate rock with sulphuric acid. The actual mixing is a troublesome process, as acid fumes are evolved which are most objectionable to the workers. Various methods

this, extensions to the ammonia plant costing millions of pounds are well in hand, and in view of their mutual interest in this subject there is a constant exchange of information between Billingham and Nobel Divisions and Modderfontein. Modderfontein are also erecting their own detonator plant.

Somerset West, the factory in Cape Province near Cape Town, is the third largest producer of explosives in the world. This factory has also other lines. It has a large production of fertilizers, and in recent months has opened new extensions for the manufacture of paints and leathercloth. The layout and design of these two projects were drawn up by the corresponding Division of I.C.I. and were based on the latest methods known to them. I.C.I. technical personnel and skilled operatives were sent out to assist. Difficulties were encountered in the early stages due to the time it took to get the machinery on order in this country, but finally these were overcome, and on 20th September, 1949, the plant was





EARLY DAYS at Umbogintwini, Natal: the works fire brigade with their equipment

have been devised for dealing with this problem, the very descriptive term "den" being applied to the apparatus in which the mixed superphosphate is allowed to react. The first "dens" erected in 1919 were of small capacity and difficult to operate, and it soon became necessary to extend them. Extensions were made regularly to cater for the increased sales, and the present output is 410,000 tons annually.

The most recently erected plant for sulphuric acid production was completed in 1949, and comprises two sulphur burning contact units, each of which is capable of making 140 tons of sulphuric acid a day. The superphosphate process begins with the off-loading of Moroccan phosphate rock, which is conveyed to the factory, where cranes feed it into nine mills. These grind it to the requisite fineness for mixing with the sulphuric acid. The finished superphosphate is discharged from the "dens" on belt conveyors which take it to the store, where it matures for several weeks. After this it is sieved, packed into bags, and loaded into trucks for despatch to the farmers of South Africa.

Apart from explosives and fertilizers A.E. & C.I.'s pro-



UMBOGINTWINI. An early picture showing a search for matches, while native police-boys stand by.

duction of other chemicals is by no means insignificant. Their output of sulphuric acid amounts to 42,000 tons every year. They also produce 40,000 tons of ammonium nitrate a year and 24,000 tons of ammonia, and they are interested to a large degree in producing lead nitrate. Their new factory at Klipspruit makes cyanide from municipal sewage gas and in time will cater for some 30% of the requirements of the mines.

Extensive research is being carried out and already big new plants are well in hand—at Modderfontein, for instance, where a new plant is in course of construction which will produce a further 26,000 tons per year in terms of nitrogen.

A.E. & C.I. numbers among its employees Europeans, natives, coloureds and Indians. A contributive pension fund takes care of the retirement problems of the Europeans and a special fund looks after their medical needs. Many of the employees

are housed on factory properties, and bursaries for their children have also been established. To give encouragement to young scientists A.E. & C.I. have also established post-graduate research scholarships at South African universities.



Illustrated by M. Aitchison



# One against the Multitude

By L. H. F. Sanderson (Central Staff Department)

**T**HIS article must not get off on the wrong foot by attempting to define the qualifications for the job of referee or to provide a potted course of instruction for the would-be referee—a relatively rare bird, anyway. Its object is not this, and least of all to explain the rules or “laws,” as the strict phraseology of the Rugby Union has it.

Anyone who wants to study these without tears cannot do better than read *Why the Whistle Went*, a mine of common sense and humour issued a year or two ago by the Rugby Union and admirably illustrated by Fougasse. Rather is it a case of a few reflections and reminiscences of one who has done the job for many years and yet survived—physically at least—the slings and arrows of outraged players and spectators.

Nor will there be any clash in ideologies as between Rugger and Soccer. In fact, it is an opportunity for a referee of the former to pay a tribute to his Soccer colleague and admit the many difficulties the latter has to contend with, to say nothing of the need for great fleetness of foot in a game where the ball goes from end to end of the ground with great rapidity. It may be that the Soccer referee has the help of capable linesmen who have wide powers and are good at their job; if so he is lucky, for in Rugger the duties of these officials are limited and, except in the highest flights, usually carried out with astonishing ineptitude. In financial respects alone is there a sharp distinction, for the post of Rugger referee of whatever grade is strictly honorary.

How does one become a referee? As in other walks of life, old age—at 35 the ribs react less sympathetically to the boots

of the opposing forwards—brings enforced retirement from the active fray. Golf seemed a trifle slow until the ingenious idea came to me of hitting the ball and *running* after it, a procedure which was held to be more snitable for the hockey field and inconsistent with the dignity of the Royal and Ancient game. Prowess at the nineteenth seemed to be the only qualification in common with Rugger, so my thoughts returned to the ancient glories—but in more restrained form.

Perhaps too in my case I was fired by an experience many years earlier when, as one of a few pioneers of the game in Central Europe, I was asked in a more or less representative match between Austria and Czechoslovakia to exchange the role of scrum-half in the Austrian side for that of referee; this was in the interests of international peace, although a doubtful compliment perhaps to one's value as a player. However, the result was satisfactory, for the Czechs, surprised at receiving justice (especially from an ex-member of the opposition), accorded a reception at the end of the game which must be allowed to lose itself in the mists of modesty. The still more remarkable feature of this game and a measure of its novelty was the local press report, which (translated literally) found the most notable feature of the game was the scrum with its “display of well-nourished hindquarters.”

It is strange how the spectator, the least affected personally by the misdemeanours of the referee, is so much more prone to caustic comment than the average player: the gambits are too well known to the referee to worry him very much. Situated behind the goal line are the spectators who are experts





*At 35 the ribs react less sympathetically*

on the forward pass, rather like deep extra cover appealing loudly for an l.b.w. decision. Or "Eh, Ref! Why doan't ye wear gla-a-a-sees?" Some go still further, and at a famous Midland ground a shrill female voice has been heard to cast the gravest aspersions on my parentage.

Silent disregard is the golden rule, not because the referee thinks himself infallible—a wise referee knows that he will be fortunate if he doesn't make more than half a dozen mistakes in a game—but because his control of the players will be ruined if they think he is affected by extraneous influences. A well-known and otherwise most capable referee used occasionally in desperation to turn and shake his fist at the more vocal part of the crowd—a fatal mistake; indeed, it is rather amusing to make a point of standing near the noisiest part of the crowd merely as a mark of indifference. When the players start "nattering" much the same detachment is called for, and the wise referee will avoid falling into the trap of



*... inconsistent with the dignity of the Royal and Ancient game*

saying "Who's refereeing this game, you or me?" because it will inevitably bring the classic reply, "Neither of us, sir!" He knows too that many of the players will spend the first ten minutes watching him to see just what he is going to allow and what they can get away with.

A strange contrast, by the way, with cricket. In football anything which the referee will allow or fails to see is considered fair enough; but who in cricket would try to dislodge the bails with his foot when the umpire wasn't looking, or even seriously dispute any ruling he gives?

Although bound by the laws of the game every referee has his own technique for maintaining order, and even this has to be varied according to circumstances and atmosphere and to the types of players themselves. Everything is indeed theoretically laid down in chapter and verse. So also is a Beethoven symphony, but no two performances under different conductors are exactly the same. Indeed, the simile is not inapt, for it is the referee's function to achieve a right balance: too much "head" and it becomes chaos, too tight a rein and the game lacks life and spirit. Add to this, however, the vital necessity that if justice is occasionally to be tempered with mercy it must be done with complete consistency, otherwise the fat will be in the fire and angry mutterings will arise from all quarters. All this emphasises the absolute power of the referee, whose word is law and decision unchallengeable; but let him wear this authority with humility, for it applies on the field only, and in the long run he will be judged by the experienced oligarchy of the game after the noise and dust of battle have died down (say by Monday morning), and then may come the caustic, "Oh, yes, he knows his stuff all right, but his dramatic posturing made me ill; and what about his solos on the whistle?"

Probably, in fact, the greatest compliment which can be paid to a referee is to say that he was hardly noticed. In any case he will, if he is wise, write off the charming things said to him after the match by the winning side when the second jug of beer is going round. The remarks of the losing side on their immediate return to the changing room will probably be much nearer the truth, but in neither case need he take either unduly to heart, for only those who have taken to the whistle even after years of active play realise how relatively little does the average player know of the laws of the game and their application.

One of the things that every referee hopes to avoid is the necessity of sending a player off the field, partly because of the official machinery which creaks pompously into motion and partly because it is all rather unpleasant and out of keeping with the spirit of the game. Probably most of us err on the side of leniency and anyway have our own ways of trying to avoid the situation which makes inevitable the final dismissal. One method which often works is to pull up the game with an ominous blast and, seizing the culprit gently by the arm, walk him away, delivering the while an appropriate homily on his particular sin. In fact, he is often so under the strain of one emotion or another and ready even to hit the referee for six, that it doesn't matter much what you actually say. A recitation of "Mary had a Little Lamb" would probably do quite well, for he most likely won't listen anyway; but the break has given time for tempers to cool and has moreover singled out the offender to his colleagues as a candidate for the Most Dishonourable Order of the Boot. It is on occasions like this that the referee often has cause to be grateful to a captain for leadership and sage counsel to his side.





... cast the gravest aspersions on my parentage

More trying was an occasion on a certain Midland ground when a series of individual battles called for a peremptory blast and an immediate cessation of hostilities. Having refused to go on until tempers cooled, I turned my back on the players and walked the length of the field admiring the beauties of the heavens. It was hardly possible for the players to resume their battles in cold blood, but being already extremely unpopular with the home side supporters the seemingly endless walk was accompanied by such a furore of cat calls, shouting and general abuse that my sidelong glances towards the police were perhaps justified. Fortunately the enforced blood-cooling interval achieved the desired result.

It is amazing how many new points arise despite the masterly drawing up of the laws. If anyone doubts this let him attend any of the discussion meetings which are held regularly up and down the country, where he may hear a zealous seeker after knowledge ask in all solemnity: "If the ball kicked at goal bursts in mid-air and remains poised on the goal post, is it a goal?"; or "The ball in a drop-kick at goal dislodges the cross-bar, which falls on and stuns an offside



... the greatest compliment is to say that he was hardly noticed

player. What does the referee do?" The answer to the last is probably to send for an ambulance, but whether in extreme cases or in the normal minute-to-minute decisions, quickness and firmness in making up one's mind are a vital part of the referee's stock-in-trade.

During a recent visit to Chile I was invited to referee a game in Santiago. It was a great pleasure to do this and to find the game flourishing in such distant parts, but an almost equally lasting memory of this occasion was the sight of a press-cutting which is a treasured possession of one of the senior Rugby officials there. In a list of players for a forthcoming game a vacancy had been indicated by the customary "A. N. Other"; the over-zealous commentator had drawn vividly on his imagination and told his readers (in Spanish) that "... finally Other, the hooker, has great achievements to his name." Perhaps after all he spoke more truly than he knew.

It is the popular belief that the referee's is a thankless job. This is very wide of the mark. It is true that he has long and



"Mary had a Little Lamb"

solitary journeys without the congenial company which the player has and that for obvious reasons he cannot expect universal popularity. On the other hand, it is extraordinary how much understanding and appreciation are shown by the great majority of players and club officials. Add to this lavish hospitality, to say nothing of much valuable practice at after-dinner speaking.

Every referee knows better than anyone else that in some games nothing goes right for him whereas in others he has hardly put a foot wrong. The latter is, of course, an artistic satisfaction to which must be added the personal pleasure of taking an active part in the game and keeping in touch with Rugger men for much longer than would otherwise be possible. In addition to the value of the physical exercise and fitness involved, it affords, as the reader may have gathered, a fascinating psychological study of men, frequently under stress. Apart from all this, if the game is to go on somebody must blow the whistle, anyway.



# Round the world with

# G.B.S

By Neil G. Marr (Metals Division)

**T**HERE is something about the phrase "round the world" which is pleasantly exciting to everyone, even those of us who, in one capacity or another, have learned to feel quite at home on board ship. But when, in the winter of 1932-3, I sailed as ship's doctor on the S.S. *Empress of Britain*, it was not only the prospect of a five months' luxury cruise in many strange waters which provided the thrill: it was knowing that among the four hundred passengers we should number one of the world's outstanding personalities—George Bernard Shaw.

The English travellers were to embark at Monte Carlo (we had picked up the American contingent in New York), and even before we reached Monaco preparations for welcoming the ship's most distinguished passenger were under way. Not the least anxious man was the chef, who had the responsibility of seeing that the great man's favourite vegetarian dishes were all available.

Mr. and Mrs. Shaw duly came on board, where they were besieged by an enthusiastic band of reporters. "You may tell your readers," ran G.B.S.'s first words, "that I am about to circumnavigate the globe without signing a single autograph"—a promise to be broken not once but hundreds of times in the next five months!

Within a few hours Mr. Shaw made clear his opinion of "lion-hunters" who tried to scrape acquaintance. He was approached on the promenade deck by a lady who asked, "Don't you remember me, Mr. Shaw? I was the wife of X" (a very well-known novelist). "Oh, really?" was the unconcerned reply. "And whose wife are you now?"

Shaw was then in his seventy-seventh year. Such was his vitality that, as soon as the weather permitted it, he became the first person on board to dive into the open-air swimming pool: this he repeated every morning, before breakfast. But he did not believe in sun-bathing, and was frequently seen

striding round the deck at great speed, wearing in spite of the heat a dark-brown robe, girdled with rope like a monk's habit: a heavy cowl shielded his head and face, so that only the famous white beard was visible. (Shaw, by the way, provided a characteristic comment on the old riddle about the disposal of whiskers in bed: he slept on his side, with one half of his bifurcated beard inside and the other outside the bedclothes!)

Everywhere we docked, Shaw was fêted by the local officials and badgered by the local Press; it was the latter he enjoyed most. "You must come along to my press conference," he said on more than one occasion; "we'll have some fun!" One reporter asked him if he knew that his book *Adventures of a Black Girl in Search of God* had been banned from the Dublin Public Libraries. "I'm delighted to hear it," was the immediate reply; "it will give me a lot of publicity, and after all, if people can't read the thing in the library they'll have to buy it." He added, however, that he was disappointed to find Dublin treating him like this when it ought to be putting up a statue to its most illustrious son. (Incidentally, Mr. Shaw presented me with an autographed copy of the book under discussion; but some years later, when I was particularly "broke," I sold this to an American for \$100!)

Since he died, many people have testified to the great generosity which the playwright practised under a cloak of hardness. Apart from his comparatively lavish disbursements of tips and autographed photographs to members of the ship's staff, I came across two examples of this on the *Empress of Britain*. One of these affected me personally. Several times during the voyage I attended Mr. and Mrs. Shaw professionally, and in time the usual account was sent in, covering so many visits at 5s. each. By return came a cheque and a note saying, "Even in my poorest days in Ireland, doctors used to think their visits worth a guinea each. Here is my cheque for so many visits at this rate."



The other story concerns a middle-aged and particularly shy English spinster on board. Ignoring the rich and famous, Mr. Shaw singled out this lady, whom he christened "Jane," for his almost undivided attention; they sat in neighbouring deck-chairs almost all round the world. The ardent teetotaler refused point-blank to attend any of the elaborate cocktail parties to which hostesses tried to enveigle him, but towards the end of the trip he himself gave one—in "Jane's" name. Moreover he saw to it that the lady herself acted as hostess to the distinguished company!

In this long period it was only natural that we should be treated to two or three instances of typical Shavian cussedness. Mr. Shaw was due to lecture to students at Hong Kong. The Chinese reporters who met him suggested that, in view of the tense international situation, it would perhaps be wiser to avoid controversial political issues. That, of course, was sufficient to bring forth a brilliant and passionate address on Karl Marx!

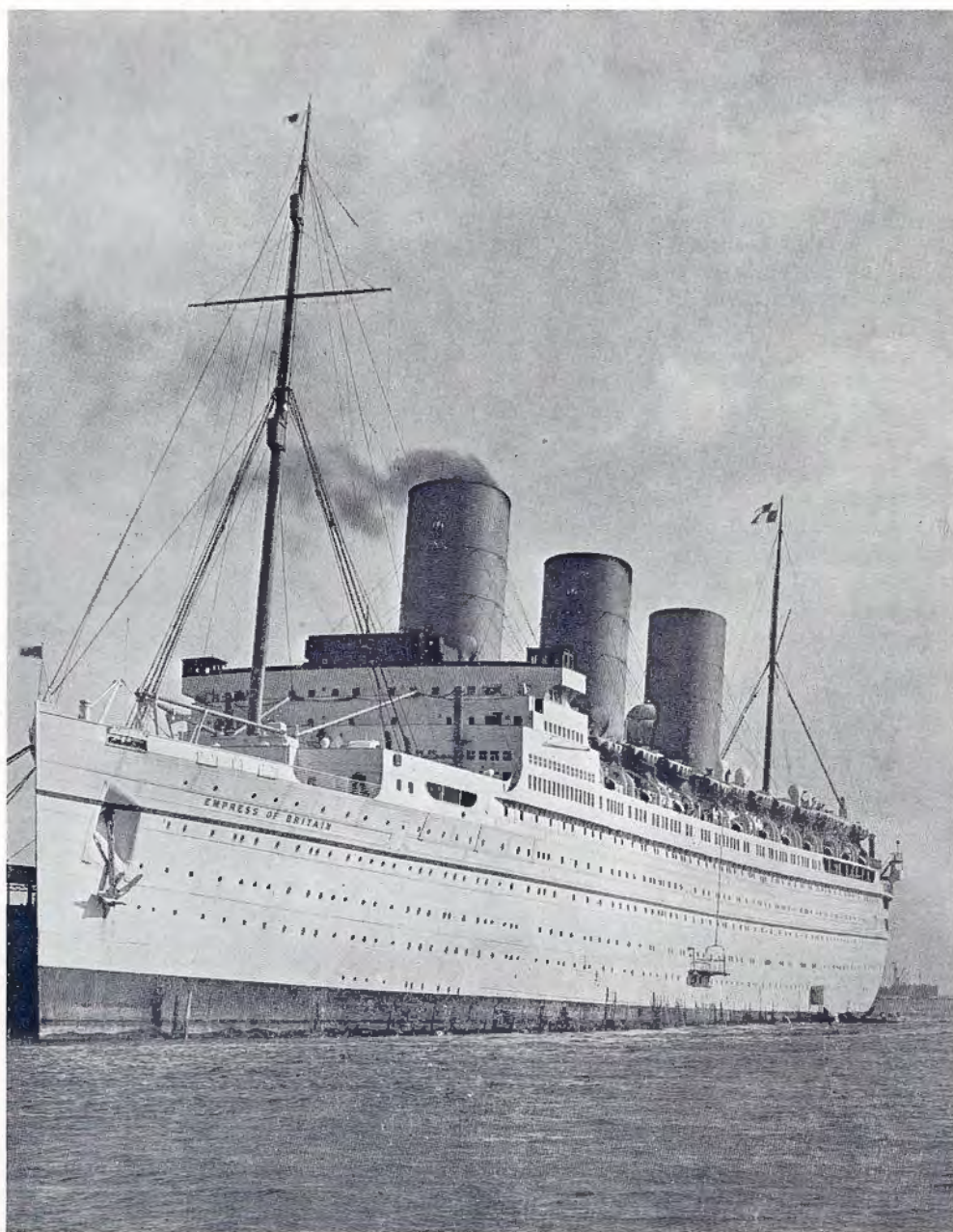
When a ship travels through the Panama Canal it is customary for American lecturers to come on board and describe the marvellous engineering feat it represents. Shaw listened attentively until the lecturer blithely claimed that the scourge of malaria and yellow fever among native workmen had been conquered by "a triumph of American medicine." This was too much for the Irishman. "Ross!" he interrupted loudly. "I beg your pardon, sir?" stuttered the lecturer. "I said 'Ross'!" Shaw repeated firmly—and walked away.

In one port, however, the biter got bitten. He had on a previous occasion sorely offended the local bigwigs by his refusal to co-operate in their plans. When we landed there, the local newspapers carried large headlines—"Mrs. G. B. Shaw arrives, accompanied by her husband."

Other impressions remain. Shaw in China, where I was privileged to join him in a flight over the Great Wall; Shaw in Japan, making outspoken comments on the conduct of the Sino-Japanese war; Shaw in Hollywood—a sight almost too fantastic to be true. I can picture him now returning to the ship from Honolulu, hung from head to foot with flowery leis; in Havana, refusing to visit "Sloppy Joe's"—the most famous pub in the world; and in New York, where he affectionately described the Americans as "just emigrants from England."

But more vivid and lasting than any of these impressions is the conviction that meeting Shaw was a rare and probably unique privilege. I was lucky enough to see a side of him which escaped the glare of publicity. He was, underneath all his acid wit and sarcasm, an adoring husband and a friendly and unaffected old gentleman who treated almost all the people he met with kindness and courtesy.

True, he pulled my leg along with many others. One day, when his wife had sent for me as he did not seem well, he pretended he had never seen me before. "Well, what is it?" he snapped from his bed. "The doctor, Mr. Shaw." "Hub—shouldn't boast about it, if I were you!" Perhaps it would amuse him to know that, nearly twenty years later, the doctor is boasting about having come briefly into contact with the author of that wisecrack!



*The Empress of Britain, in which George Bernard Shaw travelled round the world under the care of the author*



# I.C.I. NEWS

## SIR FREDERICK BAIN, M.C., LL.D.

The shock with which all in I.C.I. heard of Sir Frederick's untimely and tragic death is both too recent and too deep for it to be appropriate to make detailed record in the pages of the *Magazine*.

Sir Frederick fell, breaking several ribs, while struggling to suppress a choking fit, which he feared might interrupt the speech of the principal guest, at the farewell dinner given by Mr. Ernest Bevin to the retiring American Ambassador. He died in hospital nine days later from a rare complication which subsequently developed. Few men have been held in greater affection throughout our Company, and that the news of such an untimely end would be greeted with grief and dismay within the family circle of I.C.I. was only to be expected. Consoling, perhaps, to his innumerable friends will have been the evidence from so many quarters of the affection and regard in which Sir Frederick was held in the world at large. Some measure of this may be gathered from the following selection of the many appreciations which have appeared in the papers.

*Under the heading "Personal Magnetism" Lord McGowan wrote in The Times:*

The passing of Sir Frederick Bain, after a very short illness, leaves a blank in the lives of his innumerable friends that will not be filled. He was the possessor of a rare brand of personal magnetism that attracted people to him in every walk of life, and they were never disappointed. He was infinitely kind and generous, had a great zest for life, loved its beautiful things—its books, and plays, and poetry—and lived it with all the dash and élan of the Gordon Highlander that he was. He rapidly

overcame the physical disability caused by the loss of his arm in the first world war. It did not affect his spirit—he was always so unquenchably cheerful.

He was a prodigious worker, not only for our own company

but on Government committees, where his experience was of the greatest value. His enthusiasm had the quality of wildfire, and could be relied upon to engulf all those with whom he came into contact. He was a tower of strength in our organisation, and in his passing we suffer a grievous loss. Sir Frederick had travelled a great deal, and his wonderful faculty for making friends in foreign lands served to cement invaluable trade relationships, not only for I.C.I. but for the British nation. He will be much mourned as a personal friend, not only within our own organisation but by countless people not directly associated with it.

*I. B. wrote in The Times:*

Many will deeply miss the company of Frederick Bain, London Scots not least. He was very happy to be honoured this year by the University of Aberdeen, whose evening classes he had taken as a boy. He had come up from Macduff; to

his dominie at Banff Academy he often expressed gratitude. In his busy and triumphant career as chemist and administrator he found time to read and remember more than most literary people have perused and forgotten. He was the master, text-perfect, in any argument over Burns, Milton, or Shakespeare, but he had a wide range of appreciation among contemporary writers too. His lavish hospitality included not the feast of Scottish reason only but a flow of soul that took in its flood the good things of all kinds and nations. The "noctes" at his house in Palace Court were full of the talk



(Photo by Karsh, Ottawa)



that is rooted in reading and flowers in gaiety. His was a blithe, abounding spirit.

*Commenting on I. B.'s appreciation a correspondent wrote later in The Times:*

I. B. has written of Sir Frederick Bain that he was master, text-perfect, in any argument over Burns, Milton, or Shakespeare. I remember one night when the late John G. Winant was trying to find a quotation to use in inscribing a book he was giving as a farewell gift to General Eisenhower, who was then leaving England. Bain quickly suggested these lines from Burns:

"Wha does the utmost that he can,  
Can whiles do mair."

I have often thought that these words might be an epitaph to Frederick Bain. His death is a national loss.

*P. B. C. wrote in The Times:*

Losing an arm or leg in World War I was, after all, a jest of genuine merit, provided that the loser saw the fun. Freddie was one of those high-hearted men who leave their artificial arms at home. When Toc H first began to be reborn he had resumed his work at Liverpool, where he became a Toc H pioneer, and throughout Lancashire he exercised his well-nigh magic powers of leadership at a time when it required moral courage for anyone to take so strange a step. Freddie relished a foursquare friendship with all decent men. He viewed them with immediate confidence and had a magic memory for names.

When the first birthday of Toc H occurred as a civilian growth we wisely laid the conduct of the enterprise on him. He should inspire the feast. He should be chairman. Major and minor matters came to him—the issuing of tickets, music, drama, programmes, and pageantry were on his shoulders. What the distinguished speakers ought to say, and what they should omit, was his affair. We had to feel our way on these occasions, since there was no tradition to follow: but gradually the whole tradition came under his expert tact and energy. They now form part of our inheritance.

Meanwhile his own career could never halt. Pressure of duties grew still more intense and holidays increasingly infrequent. As deputy chairman of Imperial Chemicals and chairman of the Federation of British Industries he still found time to broadcast for Toc H. At his suggestion I.C.I. itself welcomed Toc H and kept in touch with it. Nothing could stay his hand from helping forward the movement that he loved with his whole heart. When he attained the post, at a dark time, of chairman of F.B.I. Toc H expected that it would be orphaned; but he was not content with such withdrawal, and when the festival of 1950 required a chairman he once more consented; for every fibre of his inner nature was resolutely vibrant for Toc H.

The accident which took him to the Westminster Hospital resulted from a fall and fainting fit at a small dinner of farewell given by the Foreign Secretary to Mr. Lewis Douglas. But from the hospital he wrote invincibly his message to the Toc H festival. He mentioned as a matter of amusement three broken ribs; but on the same Saturday night it became clear that there were very serious complications. A desperate operation was performed on the Thursday morning. For a time he rallied, but in the afternoon unconsciousness became most marked. Thus one more Flanders friend, who held nothing back right from the first, passed through the headlands to the open sea.

*J. B. wrote in the Manchester Guardian:*

Few people who have met Frederick Bain in business or social life can ever forget him. Tall, soldierly, he had a masculine grace that one finds sometimes in the Scottish Highlands (Cunninghame Graham had it), and this he retained till his sixties: he seemed unconscious of the loss of his left arm, which he had left in Flanders in the first world war when he was a captain in the Fourth Gordons. He could do everything with one hand but tie his dress tie. No one could be less like the popular conception of a big business leader than Bain. His natural friendliness and courtesy never left him, and that, combined with his swift understanding of human relations and the point before him, probably accounted for his continued success in the solution of employer and worker problems that has long marked the record of I.C.I. even in these bitter times.

In his many visits to the United States and Canada he did much to ease affairs there at difficult times by frank discussions in high Government and business quarters. At least one of these visits was made at the suggestion of the Government and its effect was deepened by the knowledge that in no way had he been bound by Government views: he was, of course, completely opposed to nationalisation. His last visit, when he had a long, clear exchange of views with Mr. Hoffman, was believed to have had particular importance. He had much in common with his closest friend George Macleod, the eloquent individualist pastor of the Iona community, who, like Bain, got his M.C. in the first world war.

Sir Frederick Bain cared much for letters and art. He read through Shakespeare every three years and after Shakespeare he read Milton, Wordsworth, and Boswell. Robert Burns he knew well, and once gave a memorable address on that poet to the Ayrshire workmen one Burns Night. He was blessed in his marriage to Isabel Adami, daughter of the Vice-Chancellor of Liverpool University, who wrote some notable poems. After her death in 1945 Bain spent his rare holidays alone in distant quiet places in Scotland or Spain reading and reflecting. In his ordinary life he was the most social of men and the most modest, with many friends, especially among writers. The talk was always good and the company happy when Fred Bain was at the head of the table.

*W. M. wrote in the Sunday Times:*

In his native Highlands, in Liverpool, where he first laid the foundations of his commercial career, in the South of England, where on that foundation he built a national reputation, a multitude of friends mourn the untimely death of Freddy Bain.

In appearance, in character, in career, he was truer to the finest type of Highlander than any fiction. Tall, raw-boned, with features that might have been hewn out of his native granite, porridge was obviously his natural food and the kilt his natural garb. His determination and his courage were put to early tests, for he had to overcome difficult early circumstances and to suffer shattering wounds in 1916. He never faltered then or thereafter, as his career took him along the paths of industrial achievement and public service which led him to the Deputy Chairmanship of I.C.I. and the Presidency of the F.B.I.

Belying his appearance he was kindly, gentle, "douce." He always found it easier to sympathise with the difficulties of others than to blame their mistakes. That is why he was



loved not merely by his friends, but by all who worked for and with him.

## ALKALI DIVISION

### *Kynoch Challenge Trophy Match*

The annual match for the Kynoch Challenge Trophy took place on Saturday, 28th October, between I.C.I. (Alkali) F.C. and Kynoch Social Club on Moss Farm Sports Ground, Winnington.

Because the weather was rather foggy it was a pleasant surprise to find the Metals Division party arriving promptly at noon at the Winnington Park Recreation Club and in really high spirits. The visitors were entertained to lunch in the Winnington canteen. By the time the teams eventually reached the Moss Farm ground the fog had lifted sufficiently to allow the game to be played.

A number of changes had taken place in the Metals Division team since last season. The standard of football on both sides was of very good quality; the Alkali team opened the score after about fifteen minutes' play through Hewitt, who increased the lead to two goals before half-time.

In the second half, Metals Division pressed very hard and scored through H. Brooke. This spurred on the visitors, and it looked at one stage of the game as if they would draw level, but Hewitt, the Alkali Division centre-forward, scored two further goals for the home team, who won the match by 4 goals to 1.

Mr. T. G. Austin, the Metals Division Labour Manager, presented the trophy to George Higgins, the captain of the Alkali team. After the game the party from Birmingham, the members of the Alkali team and their friends had tea together in the Crescent Hall, Winnington. This was followed by the I.C.I. Supporters Club dance, and after a very pleasant evening the visitors left for home at 11 o'clock.

### *The Alkali Film*

The picture below is a scene from the Alkali film, which is now in full production, and shows a dinner given by the directors to Sir John Brunner and Dr. Ludwig Mond in the dining room at Winnington Hall, Northwich. The tenor who is preparing to sing "I fear no foe" is a professional actor, but the rest of the company are members of the Alkali Division with the exception of the gentleman facing the camera who is just about to sample the directors' brandy. About him there



is an interesting story. Many of us will recognise him as Mr. H. G. Winbolt, who left I.C.I. in 1930 and later became an industrial safety consultant with Messrs. Botham and Winbolt.

He tells us the last time he visited Winnington it was in connection with an Alkali Division film taken some twenty years ago; on this visit he had not entered the Hall more than a few minutes before he was pressed into substituting for an "extra" who had been unable to turn up. Not only had his two visits to Winnington been marked by close connection with the two Alkali films, but also his cameraman for the first film was old Mr. Rodwell, father of Ken Rodwell, the cameraman in the I.C.I. Film Unit who is making the second film.

## BILLINGHAM DIVISION

### *Dr. T. Corlett Mitchell*

Dr. T. Corlett Mitchell (Works Manager, Commercial Works) has been appointed to the board of Central Agricultural Control. Dr. Mitchell had the difficult task of forming Commercial Works during the last war. The success which crowned his efforts is a tribute to his organising ability and his foresight.

### *Billingham Entertains Nobel Factory*

The 300 people working at Haswell, outpost factory of the Nobel Division, have little opportunity of meeting their colleagues in other parts of I.C.I. Tucked away in north-west Durham, their social activities are confined to whatever they can organise among themselves. So when Billingham's deputy labour manager, Mr. G. A. Wilson, some months ago suggested to Mr. W. R. Moore, Haswell's works manager, that an evening of indoor games be arranged between Haswell and Billingham the idea was taken up with enthusiasm.

The outcome was one of the most successful social evenings Synthonia Club has ever seen. Travelling down by motor coach, Haswell's twenty representatives were met at the club by the Labour Department team. Games were played, songs were sung, and piles of sandwiches were eaten and washed down with beer.

Climax of the evening was the presentation to Mr. Wilson, by Mr. Moore on behalf of Haswell, of a silver (painted) challenge cup. As the games had been drawn, this was a manoeuvre to provide an excuse for a return game at Haswell some time next year.

It is almost certain that this will be the forerunner of many such evenings. And if Haswell, apart from enjoying themselves, can now feel that they have been brought closer into the I.C.I. family circle it is all the more important that the idea should not now be allowed to drop.

### *Mr. P. F. Pike*

Mr. P. F. Pike has been appointed General Manager of I.C.I. (South Africa). He came to Billingham as the Distribution Manager and, although he has gone far since then, his connection with the Distribution Department was never completely severed. His approachability and commanding personality endeared him to all ranks of the department.

## GENERAL CHEMICALS DIVISION

### *A Veteran Rifle Club*

Revival of the I.C.I. Rifle League brings rifle shooting into the foreground. The Rifle Club to whose efforts this revival



is largely due is the Chance and Hunt Rifle Club, founded in 1906 through the influence of Mr. A. Macomb Chance, himself a noted shot in his day, who still takes a very practical interest in the club. The ranges occupied three large sheds of a disused factory and were officially opened in 1907 by Lord Roberts in the presence of the Lord-Lieutenant of the county.

This event so impressed Alexander M. Chance, the "father" of the company, that he founded a trust fund under which the bells of Oldbury Parish Church shall be rung on 4th April of every year for ever to commemorate the occasion. They were so rung this year.

Among the original members pride of place must be given to the late W. A. S. Calder, whose energy and keenness brought the club to a high state of proficiency in its early days, and whose gifts of no fewer than seventeen competition rifles between 1920 and 1937 were invaluable incentives to good shooting.

In its early days the club did well. Twice the full-range Astor County Cup was won (1909 and 1910) and teams were sent to Bisley at the expense of the Company to compete in the national competition. On one of those occasions the club came second in the Low Power Championship, while M. E. Adcock won the coveted Bell Trophy.

From 1908 to 1920 (with a break of five years for the war) the club remained champions of the Birmingham Rifle League despite all opposition, and on two occasions, in the county stage of the Queen Alexandra Cup competition, provided the entire county teams for Worcestershire and Staffordshire. In those days even Kynoch A could be defeated.

Today, chiefly because far fewer people are employed in the factory, numerical strength is less than of old, when matches of thirty a side were not uncommon. There are, however, several first-class shots, and keenness is very pronounced. There are only three non-employee members, but these are among the keenest and most loyal. A pleasing feature is the increasing interest of the younger members, who, coming from all sections of the works and offices, show great promise.

In 1947 the club was instrumental in the formation of a County Association for Worcestershire, and this year, on behalf of the Association, it organised and ran a small-bore Astor County Cup competition. By poetical justice Chance and Hunt were the winners, and they at once took up the option to compete in the national competition at Bisley. A team of eight travelled up, largely at their own expense, and had so interesting and enjoyable a time that all resolved to repeat the visit next year.

The club has always aimed at being a true democracy, and the spirit that has animated it from earliest times until today reflects this policy in the friendly relations that have always existed between members. Sportsmanship is the guiding principle behind all the club's activities, and encouragement of beginners has always been recognised as a matter of paramount importance.

## LEATHERCLOTH DIVISION

### *Mr. W. C. Wilson*

It is with deepest regret that we have to record the death of Mr. W. C. Wilson on 23rd November after a long illness.

He was 54 years of age, and joined the Nobel's Explosives Co. Ltd. as a research chemist in 1922 after graduating at New College, Oxford. When it was decided in 1935 that the Leathercloth Division should carry out its own research at Hyde,

Mr. Wilson was transferred from the Nobel Division to take charge because he had been engaged for some years on nitro-cellulose research, including research on leathercloth problems. He continued to do this work until he became seriously ill in the spring of last year.

Bill Wilson will be sadly missed throughout the Division. His innate friendliness and gentleness and his helpfulness to everyone earned him many friends. In particular, junior members of the Laboratory staff will remember the encouragement which he gave to them.

In the 1914-18 war he served with the London Regiment in France and Egypt, and attained the rank of Captain.

He was keen on chess, bridge and gardening and was a *Times* crossword enthusiast; apart from these hobbies, his chief interest lay with his home and family. He is survived by his widow and one daughter, to whom we extend our deepest sympathy.

## METALS DIVISION

### *Open Day at Kynoch Research Department*

On Saturday, 4th November, the Research Department at Kynoch Works was thrown open to relatives and friends of the departmental staff. During the previous week the I.C.I. Research Managers' Conference had been held at Witton, and in consequence each section of the Research Department had arranged exhibits illustrating work normally undertaken, and much highly specialised and original apparatus was in operation or available for inspection.

Although notice was rather short, many of the staff gave up their Saturday morning to entertain upwards of 150 visitors, who for two hours explored the laboratories, taking full advantage of the exhibition illustrating many branches of science applied in the department. When finishing time arrived it was most difficult to persuade some of the visitors to leave, so engrossed were they in what they were being shown.

### *American Visitors Praise our Methods*

Two representatives of an American brass manufacturing concern, making a three-week tour of British non-ferrous industries, went on 1st November to the Allen Everitt Works of the Metals Division at Smethwick. Their visit was the sequel to a tour of the United States made earlier in the year by a British productivity team from the non-ferrous industry.

One of the visitors said that in many ways British production methods were ahead of those in American factories.

### *Awards to Apprentices*

At a combined prize-giving ceremony and social function on 10th November 32 apprentices at Kynoch Works received awards marking their progress towards completion of indentures. Many management representatives joined the apprentices for the occasion, together with a goodly gathering of parents and friends.

After welcoming the visitors Mr. A. M. Kempson (Joint Managing Director) congratulated the prizewinners and those members of the staff who were responsible for the continuing satisfactory progress of the Apprenticeship Scheme, adding "a little fatherly advice to the generation who have the future of British industry in their hands."



Mr. J. T. Smith (Metals Division Chief Engineer) said how delighted he was to see a record number of prizewinners; special congratulations were due to D. S. Pointon, a fourth-year apprentice, who had gained his Ordinary National Certificate in Electrical Engineering with two distinctions and had been awarded a State Scholarship.

## NOBEL DIVISION

### *Model Engineers Visit Railway Depot*

British Railways Motive Power Depot at Polmadie, near Glasgow, is one of the largest and most modern in Scotland. In it are to be found the newest mechanical wonders for servicing locomotives.

Sixty members of Ardeer Recreation Club Model Engineering Section gladly accepted an invitation from British Railways (Scottish Region) Mutual Instruction Classes to visit the Polmadie Depot on 22nd October. Already the section and the railway organisation were good friends, and the visit increased their regard for each other.

The party was welcomed by the shedmaster, Mr. Welborn. In groups of five the visitors were conducted round the yard, beginning with inspection and explanation of the seventy-foot vacuum-operated articulated turntable. Then they saw a 400-ton capacity coaling plant which can grade fuel and simultaneously coal three different types of loco with the appropriate grades.

After the coaling plant the visitors saw how the great ash disposal problem of a large depot is solved. They examined the system above and below ground, where the giant conveyor belt runs through a 190-foot-long water trough.

Luncheon was served in the railway canteen, and afterwards the shed foreman brought out several locomotives for close inspection and photography. The star of this show was the district breakdown train, made up of a 30-ton breakdown crane, match truck and three vans. This highly efficient specialised equipment was examined at close quarters, and section members were able to renew acquaintance with several of the crew which demolished a Stevenston bridge, near Ardeer Factory, not so long ago.

Railway enthusiasts can become poetical about locomotives, and that afternoon provided enough material for an epic. Tough little black shunters, black freighters, black Staniers, W.D.s, green passenger locos and the great blue Class 7's were admired; but before the day ended there was a greater treat—when Polmadie's youngest engine, the famous blue Pacific *Princess Alice*, came in for cleaning.

For engineering men this day ended too soon.

### *Ten Years' Service without an Absence*

Miss Chriss Fickling, cashier at Sabulite Factory since 1943, has completed 10 years' service without a single absence, except for holidays. During severe winters when traffic has been at a standstill, on snowbound roads, Miss Fickling has managed to trudge the two miles from Haswell over or through snowdrifts often five or six feet deep to preserve her 100% attendance record.

Once she had the misfortune to fracture her right wrist, but even though attending the local infirmary as an out-patient she still managed to arrive at the office each day with her arm in plaster.

## PAINTS DIVISION

### *Miniature Car Racing*

Many Paints Division people know the Crooked Billet Hotel, Iver Heath, near Slough. In the accompanying picture Mr. John Desborough, late manager of the Crooked Billet, is seen with "Wiffenpuff," the jet-propelled miniature racing



car which is powered by 'Jetex,' the solid fuel manufactured by Nobel Division.

He built the car himself for £2. When the photograph was taken the car had just completed ten "laps" round the bar at a top speed approaching 60 m.p.h.

Miniature car racing is a comparatively new sport. The world speed record is held by an American, who sent his model roaring round a track at over 120 m.p.h. Cars are anchored by a thin control wire to a firm pivot around which they race, and are started by lighting the fuse which projects from the engine unit. Mr. Desborough is now building a larger model which he hopes will reach 100 m.p.h.

### *New Canteen at Slough*

Paints Division's new canteen at Slough, New Warren House, was opened on 20th November. Present at the first lunch was Mr. W. J. Willmoth (I.C.I. Catering Adviser), who had given wise guidance in the planning of the new canteen.

The new canteen, laid out on the cafeteria principle to give the quickest possible service, accommodates 408 people at one sitting. The servery extends along practically the whole hundred-foot length of one of the walls. There are four serving points—two for the main course, one for snacks, and



one for beverages. Seating is at plastic-topped tables, each accommodating four people.

One of the outstanding features of the canteen is the decorations. The Division has in this case taken its own medicine by painting the new building in striking colour schemes, provided by Colour Advisory Section. Adequate lighting, heating and ventilation have also been installed.

The kitchens of the new canteen are the envy of all wives and bachelors: the most modern cooking appliances have been installed, and cold-storage rooms and even a bakery have also been provided.

## PLASTICS DIVISION

### *A Visit from the Chairman*

In his speech to the staff and workers of Plastics Division, when he visited Welwyn Garden City on 2nd November, Lord McGowan referred to the harmonious relations existing between labour and management in the Company.

"I am a great believer in human relations," he said, "and let me give you an illustration. When we formed our great Company in 1926 we appointed a Labour Department, presided over by a director, with our instructions to be sympathetic to labour but not subservient. We felt then that the handling of labour was as important as managing the Divisions, and I think that applies today—with what result? In nearly twenty-five years now—twenty-three years, to be exact—we have established relations with our workers and staff and trade unions which today I think are the envy of other industrial corporations.

"A few years ago I conceived the idea that at the end of the year I would invite the trade union leaders of the societies which we had been contacting during the year to a lunch—nothing on the agenda at all, just a social event—to say good-bye to the expiring year in the company of friends. At our



*Lord McGowan speaking at Welwyn Garden City*

lunch in December last I made a few remarks from the Chair, and Mr. Arthur Deakin, of the Transport and General Workers' Union, and Mr. Tom Williamson, of the National Union of General and Municipal Workers, well known to many, in reply made this observation, which pleased us immensely: 'Mr. Chairman, if other industrial companies treated labour as I.C.I. does we would be a very much happier and more efficient country'—a very handsome compliment.

"Let me tell you, ladies and gentlemen, what you may not know, that at the peak of our war effort we employed 123,000 people with not one single strike—surely a tribute to the management, to trade unions and to our workers—of them we are very proud indeed."

Lord McGowan congratulated the Division on doing "a great job recovering from the slump of 1949."

He said that he saw "continued progress for I.C.I. in all its products for this year and next," and that he believed as time went on it would be appreciated more and more that the Company's goods were essential in every industry.

### *Cosmic Ray Research with Polythene*

An 'Alkathene' balloon, twice as big as the dome of St. Paul's Cathedral, is to be constructed in the Physical Laboratory at Bristol University by a team headed by Prof. C. F. Powell, the well-known authority on cosmic radiation. By sending the balloon 22 miles up into the stratosphere the scientists hope to learn more about the nature of these radiations. They hope also to discover more about mesons—the transitory particles that are thought to have some connection with the mysterious binding force of the atom nucleus.

Prof. Powell and his team have already sent up a number of 'Alkathene' balloons, and some of these have reached a height of seventeen miles. Their largest was 70 ft. in width, but the new giant they are planning will measure some 200 ft. across.

As on previous occasions, the balloon will carry a number of photographic plates to the stratosphere. In the thick emulsion with which these are coated it is hoped to trap particles arising from outer space before they are destroyed in collisions with air atoms. The chances of collision at a height of 22 miles are, the scientists say, 127 times less than at sea level. The particles are believed to come from the Milky Way, and although they are far too minute to be seen with any microscope they do leave characteristic trails in the emulsion, in appearance not unlike those left by aircraft flying at high altitude.

The plates are only 6 in. square, but examination of each one takes about a year.

### *'Terylene' Newsreel*

Technicians with cameras and bright lights brought the atmosphere of a film studio to Fibres Development Department on 23rd October, when they came to make a fast-moving newsreel sequence featuring 'Terylene.' Following a short introduction on the screen by Mr. J. R. Whinfield and Dr. J. Dickson, the originators of 'Terylene,' cinema audiences can see how 'Terylene' fibre is made, tested and woven into cloth at Tewin Road.

The drape and crease-resisting qualities of finished fabrics will be demonstrated, and cinema-goers will see a variety of 'Terylene' articles. These include baby-wear, a gossamer-like bridal veil, a man's suit, and a trawler net which has withstood five arduous trips to the North Sea and is still as good as new.

### *Fish of the Month*

A 3 lb. 12 oz. perch caught by Mr. B. R. Eade of Tunbridge Wells gained him the £20 prize in the October section of the 'Luron' Angling Competition. Mr. Eade's prizewinner, which measured 16 in. in length and had a girth of 13½ in., was taken in Small Lake, Tunbridge Wells. The second prize of £5 was awarded to Mr. G. R. Thorley of Hornsea, East Yorks, for a 3 lb. 4 oz. perch taken in Hornsea Mere.



## THE REGIONS

### *Regional Medley*

One of our Regional correspondents contributes the following account of a personal experience:

"This Regional business is getting a bit tricky. When reference is made, say, to Northern Region or Midland Region we do not know whether the speaker is talking about the Coal Board, the Gas Works or British Railways.

"My electricity bills come in from the Eastern Region (Electricity Board), I travel each day by Eastern Region (British Railways) to earn my daily bread from Southern Region (I.C.I.); I may, on occasion, leave London by Western Region (British Railways) to visit our South Western Area Office at Bristol.

"One of my colleagues arrived at Victoria Underground Station (London Transport Executive) and dreamily followed a direction indicator which said "To Southern Region." He found himself in British Railways' Main Line Victoria Station. That made him late that morning at Southern Region (I.C.I.).

"The following happened recently when my telephone rang: "I said: Good morning. — speaking (as I had been taught by London Telecommunication Region).

"He said: Southern Region here.

"I said: Southern Region here.

"He said: Blast that operator!

"I said: Who are you?

"He said: Southern Region, British Railways, of course.

"I said: Well, I'm Southern Region, I.C.I., of course.

"We then got down to brass tacks.

"So far, I have not heard that we have been asked for cheap day tickets to Brighton or to hurry up the two tons of coke that were ordered two months ago, but one of these days something serious will happen. Does it worry you? In the final count you will have to reckon on the Celestial and/or the Nether Regions!"

## WILTON WORKS

### *Wilton Works Recreation Club*

The work of preparing the cricket ground of Wilton Works Recreation Club has been finished and the grass is beginning to appear. The new fencing is completed, and once the screen of shrubs is planted the Cricket and Hockey Sections will have grounds of which they can be proud.

In his address to the Site Council last month Dr. Armit (Division chairman) referred to the progress being made by the Recreation Club and informed the Council that, as it was quite impossible to obtain permission to build anything in the nature of permanent club buildings, the design of temporary premises would begin very shortly and that these premises should be available by the end of next year.

Two new recently formed sections which promise to be very popular and successful are the Motor Car and Motor Cycle Section and the Badminton Section.

## I.C.I. (ISRAEL)

### *Visitors from Britain*

It has been the good fortune of I.C.I. (Israel) to welcome a record number of visitors from Britain during the last few months of 1950. The visitors, headed by the Overseas and Development Director Mr. J. L. S. Steel, included the chairman of Plant Protection Ltd. (Mr. T. A. Robertson), Dr. F. A.

Freeth, F.R.S., and Dr. J. L. Madinavietia, and representatives from the General Chemicals, Nobel, Metals, Pharmaceuticals and Plastics Divisions, as well as Mr. M. N. Lubin from the Near East Department.

I.C.I. has been operating in Palestine and Israel for over twenty years, formerly under the name of I.C.I. (Levant) and since the formation of the State of Israel in May 1948 under the name of I.C.I. (Israel). The Company maintains offices in Tel-Aviv and Haifa, and has recently also established a liaison office in Jerusalem, the seat of government.

Large-scale immigration—500,000 immigrants entered the country in the last two and a half years, nearly doubling its



*I.C.I. (Israel) offices and stores, Tel-Aviv*

population—coupled with the dynamic development of agriculture and industry, make Israel an increasingly useful market for many I.C.I. products, although business suffers from shortage of foreign currency on one hand and the difficult supply position on the other.

## THE FEBRUARY MAGAZINE

Dr. J. G. Cook of the I.C.I. Film Unit, a well-known writer on popular science, contributes a graphic description in the February issue on the boring operations for potash in the Eskdale district of Yorkshire. Dr. Cook manages to communicate something of the excitement felt by the men on the spot when they first found significant amounts of potash 4000 feet down.

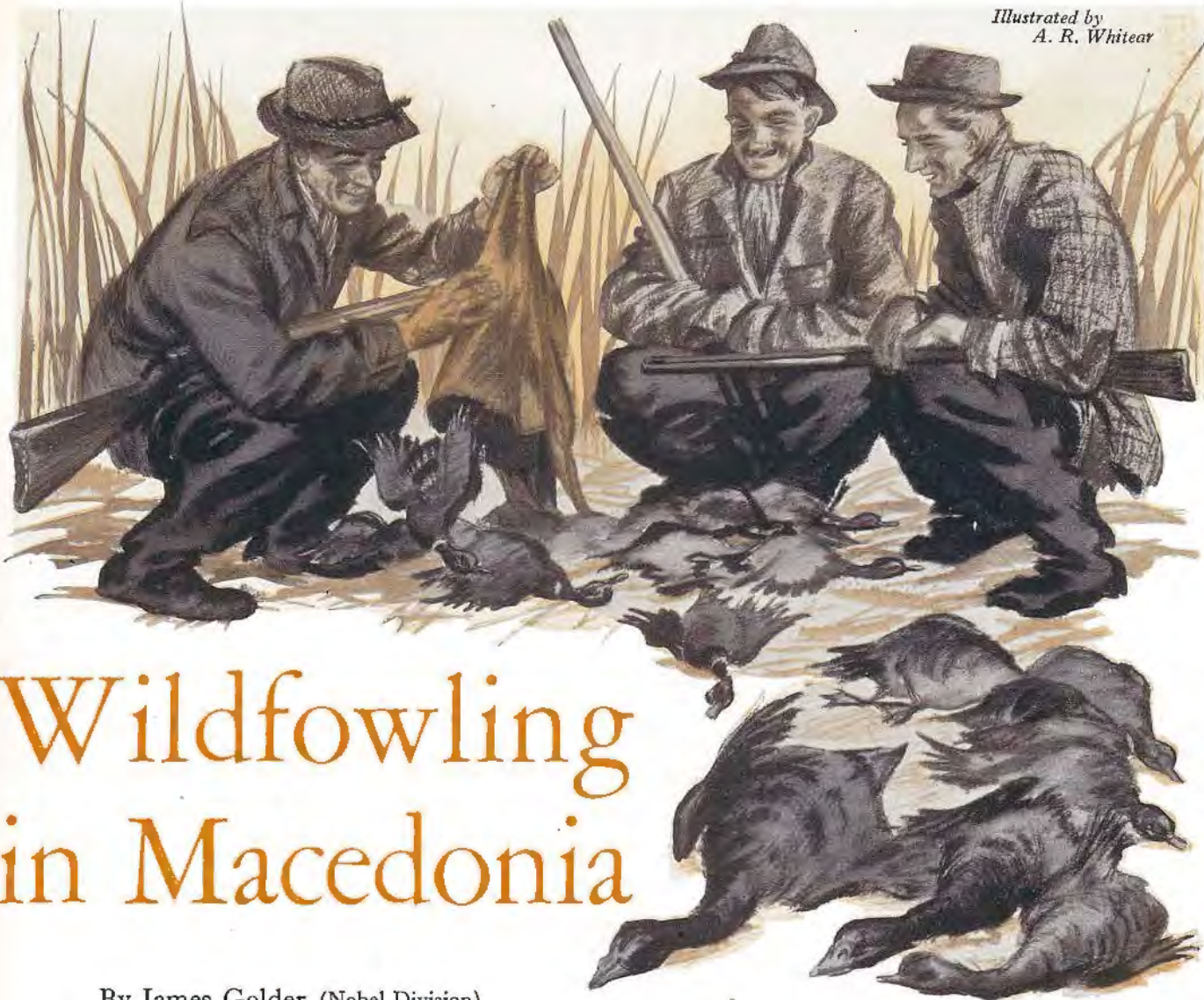
Our series on our overseas companies is continued with an article on I.C.I. (India), illustrated with some beautiful photographs from the album of Mr. Robin Goodfellow of India Department. This article gives a picture of the vast network of selling agents which, under the aegis of I.C.I. (India), covers the whole of that continent and also Ceylon. Written specially for us in India, the article explains how I.C.I. products are brought to the door of the native, with the result that I.C.I. is a household word in India today.

Of our two lighter articles, one may be said to affect the pocket. Mr. J. Clark, of General Chemicals Division, tells in detail just how he has successfully grown and cured his own pipe tobacco—a not inconsiderable saving at today's prices. The other is a descriptive article from the pen of Mr. J. M. Blackwood of Southern Region, who writes of the birds which he watched from the window of his house last winter as they came to feed at the bird table on the window-sill.

We also publish the winning photographs in the photographic competition and a selection from the runners-up.



Illustrated by  
A. R. Whitear



# Wildfowling in Macedonia

By James Golder (Nobel Division)

**I**T is an axiom of the wildfowler that "the fouler the weather, the better the fowling," and this being so it follows that wildfowling is a young man's game. It requires great hardihood and enthusiasm to spend an evening in marshland, with numbed fingers and leaden feet, and with a high wind and sleet beating down, in the hope of having a few shots at fleeting targets. When I was younger I greatly enjoyed these outings. Now, however, my enjoyment takes a different form. With the wind howling round the chimney-heads and with rain or hail battering against the windows, I am content to sit in front of a good fire in contemplation of the paintings of Peter Scott and the drypoints and etchings of Winifred Austen. With these lifelike pictures before me, recollections of the good days of the past come easily, and among the most pleasant of these memories are those of the days spent in that paradise of the wildfowler—the marshlands of Macedonia.

During the 1914-18 war British troops engaged in the Macedonian campaign occupied the valleys of the rivers Vardar and Struma, then a most unhealthy stretch of land. The chief cause of ill health was, of course, the mosquito,

which thrived and multiplied in the extensive marshes in the Vardar and Struma valleys, so much so that quite 90% of our army was more or less seriously affected with malaria. Since then large schemes of land drainage have been undertaken, as a result of which many square miles of marshland have been dried up and several considerable lakes drained, including Lakes Ardzan and Amatova each over five square miles large. This has led to a great improvement in the health of the native population and to more land being farmed. But there is one feature of Macedonian life for whose passing I have a sigh of regret. I refer to the wildfowl which found sanctuary in the marshlands and which have now been compelled to look for new winter quarters.

Within easy reach of the city of Salonika there was the great delta of the river Vardar with many miles of marshland; and in the Langaza and Struma plains were similar areas around the great lakes there. At the first sign of hard weather in the higher ground of Serbia and Bulgaria these areas were invaded by a countless horde of wildfowl of many varieties, ranging in size from the ponderous grey lag goose to the dainty teal and the elusive jack snipe.





... As the line approaches I mark the leading bird

In normal weather the birds went down to the sea at dawn and there disported and sunned themselves until evening, when they returned to the marshes to feed and sleep; and it was during this evening flight that the wildfowlers had their chance.

Picture a still winter evening, with a touch of frost in the air. The sky clothed in white clouds with the moon shiuing behind affords an almost perfect background for the swiftly moving targets. The guns equipped with rubber waders have taken their places while it was still light, and are now standing knee-deep in the water, each hidden in a clump of high reeds. These, while providing ample cover, are not so dense as to impede free play with the gun. A hush falls and the only evidence of life is in the air, where a solitary hawk sails round on silent wings confidently awaiting the approach of his evening meal.

Darkness is falling quickly and we whisper "Will they never come"? Then suddenly there is heard the whistle of a Widgeon and a pair of dark forms hurtle past, too far out for a shot. But the flight has started: nerves are



... to make himself resemble a mound of snow

tingling, and we throw the gun several times to loosen stiffened muscles. A few more moments, and out of the east come half a dozen specks. On they come, straight for our "hide," until when they are almost overhead up goes the gun and down comes a fine mallard.

Now the guns are busy, for the birds are coming in thick and fast—mallard, shoveller, pintail, widgeon, pochard and teal, and every now and then a string of brent geese making a lot of commotion as they fly. The first shot at the geese is a disappointment. Their speed is deceptive, and the only result of the shot is the clatter of lead against outstretched wings and a quick flutter as the birds zoom up into the sky. The chance is gone.

But we have not long to wait, for here comes a string of twenty grey lag geese, with necks outstretched and talking loudly—a well-defined target against the white clouds. As

the line approaches I mark the leading bird, swing a good six feet in front and pull the trigger, to have the great satisfaction of witnessing the crumple of a good clean kill. Down





chance in a lifetime, of which full advantage was taken. Four guns were placed at convenient intervals. Each, enveloped in a white sheet, endeavoured to make himself resemble as closely as possible a mound of snow. The ruse succeeded, for in a short afternoon a record bag of geese was secured.

One of the guns had a little plan of his own. When he had brought down his first goose, he propped it up in the snow to look as lifelike as possible, and with an ingenuousness which one does not usually associate with wild geese, other birds came low down to investigate and were promptly added to the family, which attained quite considerable dimensions at the end of the day.

When the light failed it was found that in addition to numerous duck there were 31 geese, which required to be carried over a mile to the car. Bent double under the load we staggered over that weary mile, but we were encouraged *en route* by the bravos of a Frenchman who also had been engaged in "la chasse," and who was bearing in his hand the fruit of his day's sport—one lark.

Perhaps the most satisfying of many outings occurred at the end of what promised to be a barren day. Spring had come without warning, but we went out hoping for a last shot. The afternoon had been spent wading round the waterholes hoping to surprise an occasional duck, and the only occupant of the

sweeps the giant body to alight in the water with a mighty smack, and I am too excited at having bagged my first grey lag to think of trying a second barrel.

And so it goes on for a thrilling twenty minutes, when a whistle rings out and we make for the rendezvous where the bag is laid out and admired—one grey lag goose, five brent geese and eighteen ducks of six varieties—a welcome contribution to the larder.

Before the ride home it used to be advisable to make a diligent search for leeches. The marshes were alive with these repulsive creatures, industriously endeavouring to find a way into the inner recesses of our persons. A most amusing episode occurred when a gallant and slightly portly major went out duck-shooting, quite unaware of a small hole in his nether garment. When the excitement of the chase was over he felt a tickling in several parts of his body, and an examination disclosed three leeches firmly attached. These being removed, the major was assured that all was clear; but fearing a leg-pull he insisted on making a personal examination, and I have a vivid recollection of his companions hugging themselves with delight as they watched the gallant gentleman's contortions as he conducted an examination with the aid of an electric torch.

Another outing of pleasant memory took place on a wintry day when the country was white with snow. The frost was so hard that the wildfowl had congregated in a comparatively small area, where swift-running streams had kept open small patches of water. These provided a scanty supply of food. There were literally thousands of geese. Restlessly they kept moving round, wave after wave in wide circles. Here was a



... the fruit of his day's sport—one lark

bag was one little shoveller. We waited for the evening flight, but there was no movement and we regretfully concluded that there would be no more wildfowling that season. We had just started for home in the car when the distant honk of flying geese was heard. In a flash the car was empty. Guns were hurriedly uncased and assembled. Stuffing cartridges into the breech, we ran off to intercept the flying birds. Three skeins of geese passed over, six shots were fired, and five geese joined the solitary shoveller in the bag—surely a fitting end to a successful season.





*"And the snow lay round about"*

*By G. Warren (Kynoch Press Studio)*